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ABSTRACT

A seat belt education campaign conducted in Canada to dispel myths surrounding seat belts and promote a better understanding of their functions was evaluated. Two telephone surveys, each comprised of 4,000 respondents, were conducted. The first was done immediately before the campaign and the second immediately succeeding the campaign. Also, a survey of 800 persons was conducted five months after the campaign ended. The evaluation indicated that eighty-five percent of the population recognized at least one part of the campaign. While the respondents could not spontaneously recall radio or newspaper advertising, they were capable of recalling commercials viewed on television. There were some attitude changes from pre- to post-campaign, and these changes were specific to the campaign element viewed, read, or heard. The most successful element was the "pumpkin" commercial, which produced a significant decrease in the number of people who believed that it is better to be thrown clear in a car crash. Seat belt use increased only in Ontario where the introduction of compulsory seat belt legislation coincided with the campaign. The follow-up survey indicated that recognition of the television and radio commercials remained strong five months after the campaign concluded. (Scripts of radio and television commercials, copies of newspaper ads, the survey questionnaires, and eight tables of data are appended.) (EM)

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ED154149

AN EVALUATION OF THE

SEAT BELT EDUCATION CAMPAIGN

A report prepared by the Road and
Motor Vehicle Traffic Safety Branch,
Department of Transport,
Ottawa, Ontario, Canada.

U S DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
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James Rochon,
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April, 1977

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FOREWORD

For some time now, road safety researchers and administrators have recognized the enormous potential benefits of having all vehicle occupants restrained by the use of seat belts. Yet, it has always been a considerable source of consternation to observe that the general public has not shared our enthusiasm for seat belts. Recent studies have indicated that to a large degree, the public was forming its opinions as a result of misinformation.

Against this background, Transport Canada agreed in 1974 to take the initiative in developing and testing materials for a media campaign. The expressed purpose of this campaign was to correct commonly-held misconceptions surrounding the use of seat belts, and to promote a better understanding of their functions in a car accident.

The present study therefore represents an attempt to quantify how effectively the campaign fulfilled these objectives. Moreover, by using this evaluation, future campaigns will be in a position to employ only those components which have been demonstrated to produce the most effective results.

Gordon D. Campbell, P. Eng.,
Director,
Road and Motor Vehicle Traffic
Safety.

EXECUTIVE SUMMARY

From January to March of 1976, a seat belt education campaign was conducted. The primary goals of the campaign were to dispel certain negative myths surrounding the use of seat belts, and to promote a better understanding of their functions in a car crash. The campaign consisted of three television commercials, namely, "egg", "pumpkin", and "coconut"; two print ads; and three radio commercials.

This report documents the evaluation of that campaign. Two telephone surveys, each comprising approximately 4,000 respondents, were performed - one immediately prior to the presentation of the campaign, and the other, immediately after. A smaller sample, consisting of 800 respondents, was also surveyed about five months after the conclusion of the campaign.

The evaluation indicated that 85% of the population recognized at least one part of the campaign. The television commercials were the most easily recalled elements. There were significant attitude changes from pre-campaign to post-campaign, and the attitudes which did change were specific to the campaign element viewed, read, or heard. The most successful element was the "pumpkin" commercial which produced a significant decrease in the number of people who believed that it is better to be "thrown clear" in a car crash. Reported seat belt use increased only in Ontario, where the introduction of compulsory seat belt legislation coincided with the campaign.

The limited evaluation of the long-term effectiveness of the campaign produced mixed results. The recognition of the television and radio commercials remained high five months after the conclusion of the campaign. Moreover, attitude changes observed immediately after the campaign remained significant.

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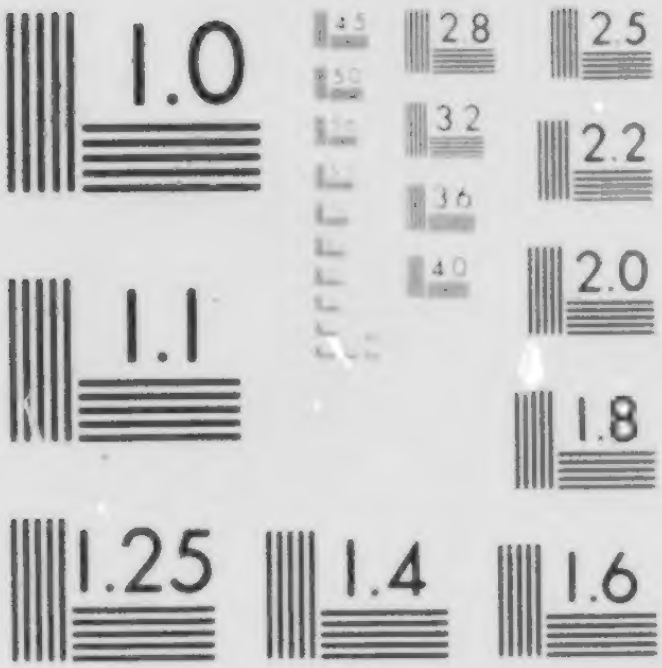

MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS 1963-A

INTRODUCTION

Seat Belts have been required equipment in motor vehicles manufactured and imported into Canada since 1971. Moreover, in January 1974, these specifications were expanded and upgraded to require a three-point lap plus shoulder belt system to be included in all new automobiles. It is now estimated (Dalmotas and Welbourne, 1975) that 94% of all the cars in Canada in 1976 have at least a lap belt available to the driver and front seat passenger, and that 76% have a lap and shoulder belt available.

The potential benefits of having all vehicle occupants protected by seat belts has been well documented over the past fifteen years. (See for example, "The Seat Belt Argument", 1974, Transport Canada Report CTS-4-74). It is currently estimated (Dalmotas and Welbourne, 1975) that if 75% of vehicle occupants used the seat belts that are available to them, the number of vehicle-occupant fatalities would decrease by about 18%; if the rate were to rise to 85%, then the number of vehicle-occupant fatalities would decline by about 21%.

These figures have been substantiated to a large degree by statistics from those jurisdictions where compulsory seat belt legislation has been enacted. For example, two years after 1971 legislation in Australia, it was reported (Henderson and Freedman, 1973) that 90% of the motoring population had been using their seat belts, and a 20% reduction in the number of fatalities had been observed. The province of Ontario also passed legislation which came into effect in January 1976, and preliminary estimates have indicated that in June 1976, 64% of the driving population have been using their seat belts, and there has been a decrease of 16% in the number of vehicle-occupant fatalities.

Despite the apparent benefits of habitual seat belt use a recent study (Stevenson et al, 1976) has shown that in May 1975, 10-25% of the Canadian driving population were using their seat belts on a regular basis. Recent surveys have indicated that to a large degree, the public was forming its opinions as a result of misinformation. Hence, there were those who believed that seat belts are actually dangerous in a car accident, or that it is safer to be "thrown clear" in a crash. It was also felt by many individuals that city driving with its relatively lower speeds, does not

pose as serious a threat with respect to injury or death as highway driving. There were also those who felt that the nuisance or discomfort factors far outweigh the safety factors of seat belts.

Against this background, Transport Canada agreed in 1974 to take the initiative in developing and testing materials for a seat belt campaign which would be made available to the provinces for use either in their own campaigns, or in a federal-provincial endeavour. From past experience in public education programmes, it was unreasonable to expect a campaign of this nature to change behaviour. It was therefore decided to concentrate on providing authoritative information about seat belts; to promote a better understanding of their functions in a car accident; and to correct commonly-held misconceptions surrounding their use. Hence the underlying philosophy of the campaign was not to directly persuade people to wear seat belts, but to make reliable information available to the public.

The purpose behind the evaluation of the Seat Belt Education Campaign was to determine how effective the "package" was in terms of fulfilling these goals. Two major independent surveys were performed - one immediately prior to the presentation of the campaign, and the other immediately succeeding the campaign - and by using this strategy, it was hoped to ascertain which changes were produced as a direct result of the programme. In addition, a minor survey was conducted several months after the conclusion of the campaign in an attempt to investigate the long-term residual effects.

Specifically, the questionnaire was designed to probe how widely the campaign was received by the public; and whether there were more positive attitudes concerning seat belts, and an increase in knowledge concerning the benefits of habitual seat belt use. It was also desired to rank the commercials, or combination of commercials according to their influence on positive attitudes. Moreover, by weighting the various media and the various commercials, future campaigns using this package will be in a position to employ only those components which can be expected to produce the most effective results.

SEAT BELT EDUCATION CAMPAIGN

Description of the Campaign

The Seat Belt Education Campaign was run for a thirteen-week period starting the week of December 29, 1975 and concluded the week of March 22, 1976. Media professionals felt that this was an excellent time for an advertising campaign of this nature, since not only had the holiday excitement of the Christmas season subsided, but also the outdoor activities of spring and summer had not yet begun.

The expressed purpose of the campaign was to dispel certain negative myths concerning seat belts, and to indicate the potential benefits of wearing seat belts. It must be emphasized therefore that the primary goal was not to increase seat belt use, although this certainly would represent the ancillary effects of the campaign. Accordingly then, both the campaign itself and this evaluation of the campaign centered on improving the public's knowledge of the benefits of seat belt use, and encouraging a more positive attitude about them.

The campaign included advertising in three media, viz., television, radio, and newspaper. Transport Canada sponsored the television component, and the individual provinces had the option of sponsoring the radio and newspaper components. The messages themselves were designed to communicate three major points to the public, and the scripts are included in Appendix A.

The first attempted to illustrate that it is impossible to brace oneself by grasping the steering wheel or dash for example, immediately prior to an accident. This was the message of the "coconut" television commercial and the "7/10 of a second" radio ad. Another set of commercials indicated that a major source of injuries occurs from vehicle occupants being tossed around inside the car, and coming into contact not only with the interior of the car, but with the other passengers as well. This was portrayed by the "egg" television commercial, and the "collide" radio commercial. Finally, it was hoped to bury the myth that it is better to be thrown clear in an accident. The "pumpkin" television ad and the "run over" radio ad were designed for this purpose.

The newspaper advertising took the form of two full-page ads. The format was modelled along the lines of a page from a department store catalogue around the turn of the century, or more recently, similar to

the Whole Earth Catalogue lay-out. For example, the "boxer-telephone pole" ad was headlined in large block letters: "Run as fast as you can into this pole", and showed a graphic of a man in the process of doing so. The accompanying paragraph described the forces involved in such an "accident", and concluded by relating these forces to those experienced in an auto crash. Various print weights and sizes were used, and on the whole, integrated several styles and sources of information (See Appendix A).

The omnibus newspaper advertisements were printed in Prince Edward Island, New Brunswick, Manitoba, and British Columbia. Some of the individual elements of the ads were extracted from the omnibus format, and these "fragmented" ads were published in a format slightly less than a quarter page in Newfoundland, Nova Scotia, and Saskatchewan. Neither the newspaper nor the radio advertising were presented in Québec, Ontario and Alberta; while the television component was available in every province. Table I indicates the number of occasions per 100,000 population that the commercials in the various media were presented in each province.

While the visual portion of the television commercials remained the same in Québec, the scripts were slightly modified to take into account cultural differences. For example, the slogan of the English language version was: "If you're not wearing a seat belt, what's holding you back?", and it was found that this could not be translated into French, and at the same time retain the "what's holding you back?" play on words. The slogan of the French language commercials was: "Ça ne vous fera pas mourir" or "It won't kill you". However, these television commercials conveyed the same information to the public as did the English versions.

The evaluation of the campaign attempted as far as possible to take into account the differences between the two versions of the television commercials. It must be noted, nevertheless, that differences between Québec and the other provinces may have been due to the style and emphasis of the French translation, as well as to legitimate differences among the provinces.

	NEWSPAPER		RADIO	TELEVISION
	Fragmented	Omnibus		
Network				0.32
NFLD.	2.33		28.01	6.10
N.S.	12.98		1.08	12.98
P.E.I.		8.33	133.33	3.33
N.B.	28.63	1.74	402.91	33.58
QUE.				4.45
ONT.				5.62
MAN.		1.46	48.25	7.88
SASK.	19.25	0.96	58.18	8.13
ALTA.				7.72
B.C.		1.36	134.48	2.57

TABLE 1: Number of Occasions that the Commercials Were Presented per 100,000 Population by Media by Province

Campaign Development

The entire advertising package was developed and tested by Peat, Marwick and Partners in the spring of 1975. Briefly, three pairs of demographically homogeneous cities were chosen - one city of each pair to act as a control, and the other city to act as a test center wherein the campaign was actually presented. The main criteria for selection of the test centers were that they form representative cross-sections of urban population sizes, disposable incomes, age distributions, and cultural backgrounds. Disposable income was especially important for the campaign because it reflects the prevalence of new car buying, and it had been shown (Bragg, 1973) that new car buyers tend to wear seat belts more often than the owners of older cars. The final consideration in the selection of these cities was that there be no media overlap between the control and test cities; that is, the advertising in the test cities should not reach the control cities.

Based upon these criteria, the following test-control (respectively) pairs of cities were chosen: St. John's, Nfld. and Saint John, N.B.; Saskatoon and Regina; Calgary and Edmonton. The advertising was presented in the test cities for a four-week period. The media plan called for the newspaper advertisements to be printed once per week in the daily large circulation newspapers; and for a television and radio campaign of 150 Gross Rating Points (GRPs). GRP is a measure of advertising intensity. For each programme where the advertisements were presented, the proportion of the viewing population that were tuned into the programme is multiplied to the number of times that the commercials were aired during the programme. These measurements are summed over the various programmes over the course of one week to derive the final figure.

A telephone survey was administered to a sample of approximately 200 subjects in each of the control and test cities, both immediately before and after the package had been presented, for a total of 2,400 respondents. The questionnaire included sections for recording demographic information, attitudes concerning seat belts, the amount of advertising to which the respondent had been exposed, and feelings regarding compulsory seat belts legislation.

The major findings of the development phase of the Seat Belt Education Campaign can be summarized as follows:

(a) The campaign reached a broad spectrum of people, and produced measurable changes in knowledge and opinion in a relatively short period of time.

(b) The underlying philosophy of informing people about the benefits of wearing seat belts and explaining their functions was very effective. These messages did change people's opinions about the benefits of seat belts, yet at the same time, studiously avoided scare tactics.

(c) Although television, radio, and newspaper were most influential in that order, a significant amount of the effect of the campaign was due to their interaction. From a cost-benefit point of view, however, television and radio were nearly equally effective, while newspaper lagged well behind.

(d) The average changes in attitudes were small, but they were highly correlated with advertising exposure. This implied that the campaign provided a gradual but steady change over the four-week period, and suggested that a twelve-week campaign would produce substantial change.

Despite the detailed analysis from the development phase, it was decided to proceed with an evaluation of the Seat Belt Education Campaign for the following reasons. The audience was a national one, as opposed to a cultural cross-section that was used in the development phase; as well, the level of intensity and the length of the campaign were also different for the campaign. Finally, the analysis of the development phase had suggested that a campaign of this nature would produce rather substantial results, and it was desired to test this prediction.

METHODOLOGY

Sampling Strategies

Two separate independent surveys were performed to evaluate the effectiveness of the Seat Belt Education Campaign, each comprising approximately 4,000 telephone interviews. The first survey or "wave" was performed before the campaign was presented to the public, and was completed during the second and third weeks of December 1975. The post-campaign wave was conducted immediately following the campaign, that is, during the second and third weeks of April 1976. A minor third wave, comprising 800 respondents, was performed in September 1976. It was felt that the evaluation should address itself primarily to changes which had occurred from the pre-campaign survey to the post-campaign survey. Hence, the discussion of the third wave is confined to a self-contained chapter towards the end of this report.

Because responsibility for the use of seat belts lies with the provincial authorities, the evaluation attempted to make statements on a provincial level, rather than to provide nationally representative data. Hence, about 400 interviews were performed per province in each of the pre- and post-campaign surveys. In each province, either two metropolitan areas, or a city and the surrounding rural area within 50 miles of the city were chosen as the sampling populations. Thus, for example, the sampling populations in Saskatchewan were the cities of Regina and Saskatoon; whereas in Manitoba, respondents were chosen from the population of Winnipeg and the surrounding rural area. The one exception was in P.E.I. where because of the small population, the entire sample was drawn from the population of Charlottetown. The sampling populations and the corresponding sample sizes for the pre- and post-campaign surveys are shown in Table 2.

Hence the surveys did not represent fully random samples either nationally or within provinces. However, since the focus of the evaluation was to document changes from the pre-campaign survey to the post-campaign survey, a fully random sample was not required; the only condition in this context was that both samples be drawn from the same population. Within these pre-selected sampling populations, the strategy was a pseudo-random sample. The universe was those households with telephone listings in the local directory of each city. The interviewer was given a starting point in a column selected at random from the telephone book, and each number down the list was dialed until a respondent was able to complete an interview.

		PRE-CAMPAIGN		POST-CAMPAIGN		
			sub-total		sub-total	TOTALS
NFLD.	St. John's Rural	206 194	400	197 204	401	801
N.S.	Halifax Rural	243 157	400	195 205	400	800
P.E.I.	Charlottetown	341	341	400	400	741
N.B.	Saint John Rural	186 140	326	200 200	400	726
QUE.	Québec Montréal	200 201	401	200 219	419	820
ONT.	Toronto Kitchener	200 200	400	200 199	399	799
MAN.	Winnipeg Rural	204 197	401	205 198	403	804
SASK.	Regina Saskatoon	200 200	400	200 201	401	801
ALTA.	Edmonton Calgary	200 200	400	200 203	403	803
B.C.	Victoria Vancouver	101 300	401	100 300	400	801
GRAND TOTALS			3,870		4,026	7,896

TABLE 2: Sampling Populations and Sample Sizes by Wave by Province

The interviewer then moved to another randomly selected column of phone numbers, and the process was repeated until all quotas had been filled.

The surveys were stratified according to age and sex within each sampling region to provide a more representative cross-section of the population. The distributions for these demographic variables are shown in Table 3. The language of the respondent was recorded for the surveys in Québec, however, the samples were not stratified according to that variable there. Approximately 93% of the pre-campaign interviews, and 86% of the post-campaign interviews were conducted in French in Québec.

The actual interviews were performed by Adcom Research Limited, headquartered in Toronto. For each wave, representatives of Transport Canada monitored the execution of the survey in Adcom's field offices. For example, monitoring was performed in Toronto, Kitchener, and Winnipeg for the pre-campaign wave; and in Toronto, Vancouver and Regina for the post-campaign survey. Toronto was monitored in both waves primarily to gauge any complications introduced by Ontario's compulsory seat belt legislation, which came into effect in January 1976. As well, the questionnaire itself was pre-tested in Saint John, N.B., so that a total of six different cities were monitored during the different phases of the campaign.

On the whole, the interviews were conducted in a professional manner, and the interviewers did not introduce any bias into the responses. The respondents seemed eager to express their opinions, and this questionnaire gave them ample opportunity to do so.

The Questionnaire

The questionnaire was designed by Dr. R. Heron of Transport Canada, and used the instrument from the development phase as one source of input. Saint John, N.B. was chosen to test the validity of the questionnaire. This process entailed monitoring interviews to ensure that the respondents were understanding the statements, and modifying the wording or grammatical form where necessary. Some preliminary statistics, namely means and standard deviations, were computed to ensure not only that respectable results could be expected, but also that statements were not so trivial as to invoke an obvious response. It was also desired to balance statements

		MALE						FEMALE						
		18 - 24	25 - 34	35 - 49	50 - 64	65+	SUB-TOTAL	18 - 24	25 - 34	35 - 49	50 - 64	65+	SUB-TOTAL	TOTALS
NFLD.	Pre	35	60	52	42	13	202	32	64	43	43	16	198	400
	Post	40	55	45	45	17	202	35	55	52	47	10	199	401
N.S.	Pre	28	40	56	34	25	183	34	44	59	51	29	217	400
	Post	20	47	34	47	23	171	32	59	53	51	34	229	400
P.E.I.	Pre	17	50	41	35	17	160	22	50	46	35	28	181	341
	Post	34	70	60	52	27	243	26	44	45	24	18	157	400
N.B.	Pre	30	39	40	31	11	151	25	39	47	48	16	175	326
	Post	30	50	40	27	11	158	28	75	58	60	21	242	400
QUE.	Pre	26	55	61	42	18	202	26	55	68	39	11	199	401
	Post	32	63	61	27	19	202	29	78	51	40	19	217	419
ONT.	Pre	60	53	47	27	11	198	39	60	49	36	18	202	400
	Post	46	65	45	32	11	199	37	47	57	39	20	200	399
MAN.	Pre	26	40	59	56	21	202	23	60	65	35	16	199	401
	Post	32	40	52	42	34	200	31	53	54	48	17	203	403
SASK.	Pre	43	60	46	36	17	202	44	47	51	37	19	198	400
	Post	49	55	50	27	21	202	52	47	36	44	20	199	401
ALTA.	Pre	55	53	52	33	7	200	29	61	64	32	14	200	400
	Post	46	60	57	30	11	204	39	69	57	25	9	199	403
B.C.	Pre	40	64	47	31	18	200	31	54	59	43	14	201	401
	Post	41	57	50	23	28	199	36	41	43	51	30	201	401

TABLE 3: Age and Sex Distributions of Respondents by Wave by Province

according to active/passive tenses, positive/negative forms, and primary/secondary target items. The instrument was continually monitored by the Transport Canada staff, and a final version was agreed upon.

There were in fact four versions of the questionnaire (five, including the French translation of the Québec version), and they varied according to which media the provinces included in the campaign. The different versions are included in Appendix B. For example, one version was conducted in P.E.I., New Brunswick, Manitoba, Alberta and British Columbia, and included questions concerning the television, radio, and full-page "omnibus" newspaper advertisements. (It was later learned that Alberta decided not to include either the radio or newspaper components of the campaign.) Since Newfoundland, Nova Scotia, and Saskatchewan partitioned the full-page ads into their various components, the recognition questions there concerned television radio and these "fragmented" newspaper advertising. In Québec and Ontario, neither the radio nor newspaper advertising were presented to the public; however it was decided to include the radio recognition questions in the Ontario version to act as a control for those provinces which did have the radio commercials. The Québec version included questions concerning the television advertising only. These two different versions brought the total to four.

The questionnaire was divided into four major divisions. In the first section, the respondent's attitudes concerning seat belts were probed. This took the form of reading nine statements to the subject, and directing him to rate the statement on a 0 to 6 scale, where "0" indicated strong disagreement, and "6" indicated strong agreement. Several grammatical forms were used including active and passive tenses, and positive and negative forms. For example in Q.1f, "A seat belt helps keep a driver in control of his car", a <u>higher</u> value represented a more positive attitude concerning seat belts; whereas in Q.1g, "In most car accidents, it is better to be thrown clear", a <u>lower</u> value represented a more positive attitude. During the analyses, these responses were transformed so that a lower value indicated a negative attitude, and a higher value indicated a positive attitude consistently throughout these statements. The attitude questions, and their corresponding designators are found in Table 4.

	ATTITUDE QUESTION	DESIGNATOR
Q.1a.	With seat belts on, you can easily become overconfident	Overconfident
b.	You cannot avoid injury in a car accident by bracing yourself even when travelling under 30 miles per hour	Bracing
c.	It is important to wear seat belts for city driving because most serious accidents occur at low speeds	City
d.	In a car accident a seat belt can be dangerous if it is worn too tightly	Tightly
e.	In a car accident injury or death do not often occur by being tossed around inside the car	Tossed
f.	A seat belt helps keep a driver in control of his car	Control
g.	In most car accidents it is better to be thrown clear	Thrown Clear
h.	Seat belts give you support and lessen fatigue	Support/Fatigue
i.	Wearing seat belts is dangerous if an accident involves fire or sinking in water	Fire/Sinking

TABLE 4: Attitude Questions and their Corresponding Designators

There were three key statements in this section which referred explicitly to the advertising. Q.1b ("bracing") corresponded to the "coconut" television commercial, and the "7/10" radio commercial; Q.1e ("tossed") to the "egg" television commercial, and the "collide" radio ad; and Q.1g ("thrown clear"), to the "pumpkin" T.V. ad, and the "run over" radio commercial. Special emphasis was placed upon these questions in the analysis of the campaign.

Exposure to the Seat Belt Education Campaign was ascertained using two types of questions. The "recall" questions required the subject to report what he remembered about each of the media advertising. The "recognition" questions were asked after the recall questions. The respondent was read a statement which identified a particular advertisement, and was then directed to indicate whether he did or did not recognize the commercial.

In an attempt to control for false-positive recognitions, a "bogus" question was included in the recognition section for each of the media. For example, the respondent was asked if he remembered seeing a television advertisement showing a marble sinking in a bowl of gravy. Of course, no such advertisement was actually shown. The radio and television recognition questions and their corresponding designators are shown in Table 5.

There were two questions which provided immediate feedback from the campaign, namely, the number of times, out of the last ten, that the respondent wore a seat belt; and the respondent's favourability to a hypothetical compulsory seat belt law, again using a scale from 0 to 6. It must be remembered however, that the primary purpose of the campaign was to provide information to the public concerning the benefits of wearing seat belts. These two questions therefore represented the ancillary effects of the campaign.

Because of the compulsory seat belt legislation in Ontario, further questions were asked in that version of the questionnaire. Specifically, respondents were asked whether they would vote for or against a hypothetical compulsory seat belt law given the opportunity. As well, further demographic information was recorded such as how often the respondent drives or rides in a car; whether there are children less than 16 years old living in the household, and so on. (See the

RECOGNITION QUESTION		DESIGNATOR
Radio		
Q.9a.	"...It all takes place in about seven-tenths of a second..."	7/10
b.	"... Teach your children to love their seat belts..."	Teach[(a)]
c.	"...Or worse - you could be run over by another car, or truck, while you are lying there stunned in the middle of the road..."	Run Over
d.	"...Sometimes passengers and drivers collide with each other inside the car and get injured that way..."	Collide
Television		
Q.11a.	Egg being smashed in a box	Egg
b.	Pumpkin being thrown out of a car, and hitting a pole...	Pumpkin
c.	Marble sinking in a bowl of gravy	Marble[(a)]
d.	Heavy metal weight dropping on a coconut	Coconut

(a) Indicates "Bogus" Recognition Question

TABLE 5: Radio and Television Recognition Questions and their Corresponding Designators.

Ontario version of the questionnaire found in Appendix B). From these questions it was hoped to gain a clearer picture of the characteristics of those people who were more favourable to seat belt legislation.

EXPOSURE TO THE CAMPAIGN

The first task in the evaluation of the Seat Belt Education Campaign was to verify that the commercials had made an impact sufficiently strong that the respondents could remember them. This was important not only in terms of quantifying the extent to which the commercials left an impression upon the audience, but also as a necessary prelude to further investigations. For example, the relationships between exposure to the various elements of the campaign and positive attitudes concerning seat belts were also explored. In order to make statements concerning a particular combination of commercials, for instance, it was necessary from a statistical point of view, that this particular combination and its alternatives be adequately distributed. This was possible only if the campaign had received good exposure.

The analyses centered on the responses to the recall and recognition questions, but it should be noted that these are two different memory processes. The recall questions were clearly the more difficult, requiring the subject to spontaneously detail what he had observed in the media. The advantage was that if the subject recounted a specific commercial, it can be assumed that he had in fact been exposed to it. During the monitoring of the survey, it had been found that the respondents generally volunteered a considerable amount of detail concerning one advertisement, rather than recalling all the advertisements in a particular medium. In some respects then, the recall questions served to indicate which commercials were most easily remembered by the respondent.

The recognition questions, on the other hand, attempted to prompt the subject's memory, and required a simple Yes/No response. While the recognition questions were more likely to draw out the elements that the respondent had observed, they had the unfortunate tendency of eliciting false-positive responses. The "bogus" recognition questions were therefore included in the recognition sections to quantify the rate of false-positive responses, and to see what rôle they may be playing.

Recall Questions

Respondents were able to correctly recall advertisements viewed on television more easily than in any other medium. For the newspaper and radio components, none of the individual commercials could be recalled by more than 1% of the sample. For the most part, respondents mentioned information gained from broadcasts or newspaper articles, or discussions found in editorials or radio "hot-line" shows. This could very likely be a characteristic of the radio and newspaper media themselves, rather than a statement concerning these particular commercials.

The television commercials produced different results, and the percentages of the sample which correctly identified the respective television ads are shown in Table 6. For example, in New Brunswick, 19.3% could recall the "egg" commercial spontaneously; 30.5% for the "pumpkin"; while 7.5% could recall the "coconut" commercial after the campaign had ended. Overall, the "egg" and the "pumpkin" commercials seem to have made the biggest impression on the public, while the "coconut" fell somewhat behind.

One possible explanation for this ranking (although by no means the only one) is that both the "egg" and the "pumpkin" related directly to what can be expected in a car crash. The point of the "coconut" commercial was to illustrate the forces that are involved in a car crash, and as such, the rôles had been reversed. That is, the commercial showed a heavy metal weight crushing a coconut, rather than a coconut being smashed with great force into a solid object. It was possible then that respondents more easily grasped the analogy from the "egg" and "pumpkin" commercials than from the "coconut" ad.

Recognition Questions

If the campaign had received broad exposure, it was expected that the proportion of people responding positively to each of the recognition questions would increase for the post-campaign data when compared to the pre-campaign data. Towards this end, multiple chi square analysis was

		EGG		PUMPKIN		COCONUT	
		N	%	N	%	N	%
NFLD.	Pre	400	0.3	400	0.0	400	0.0
	Post	401	19.7	401	17.7	401	4.7
N.S.	Pre	400	0.0	400	0.0	400	0.0
	Post	400	16.3	400	20.3	400	8.3
P.E.I.	Pre	341	0.0	341	0.0	341	0.0
	Post	400	18.0	400	24.8	400	10.3
N.B.	Pre	326	0.3	326	0.0	326	0.0
	Post	400	19.3	400	30.5	400	7.5
QUE.	Pre	401	0.0	401	0.0	401	0.0
	Post	419	24.1	419	22.9	419	12.6
ONT.	Pre	400	0.0	400	0.0	400	0.0
	Post	399	24.3	399	24.1	399	12.8
MAN.	Pre	401	0.0	401	0.0	401	0.0
	Post	403	15.9	403	21.8	403	6.9
SASK.	Pre	400	0.3	400	0.5	400	0.3
	Post	401	22.7	401	31.9	401	12.5
ALTA.	Pre	400	0.5	400	1.0	400	0.0
	Post	403	17.9	403	21.3	403	11.2
B.C.	Pre	401	0.0	401	0.0	401	0.0
	Post	400	15.0	400	30.8	400	12.0

TABLE 6: Percentages of Respondents Recalling the Television Commercials by Wave by Province

performed for each of the recognition questions in each of the media. Multiple chi square is a statistical procedure for partitioning the overall chi square from an n-dimensional contingency table among the main factors and their interactions. By examining the individual chi squares, it can be determined which of these sub-tables is providing significant results.

In this instance, the analysis was considering a contingency table in three dimensions, namely: Recognition of a particular commercial (Yes/No), Province, and Wave (Pre-campaign/Post-campaign). If sampling were completely random with respect to these three dimensions, and if the marginal probabilities were specified a priori, then the chi square from the three dimensional table could have been partitioned into a value for each of the main effects (i.e., Recognition, Province, Wave); the two-category interactions (for example, Recognition x Wave); and the three-category interaction. In this particular instance, however, sampling was not random, but restricted to approximately 400 respondents per province per wave, so that the total chi square was partitioned as shown in Table 7.

Source	degrees of freedom[a]
TOTAL	(PW-1)(R-1)
Recognition x Province	(R-1)(P-1)
Recognition x Wave	(R-1)(W-1)
Recognition x Province x Wave	(R-1)(P-1)(W-1)

[a] Where there are P provinces, R responses for the recognition question, and W waves.

TABLE 7: Partition of Total Chi Square and Degrees of Freedom for Multiple Chi Square Analysis

If the three-factor interaction proved to be significant, then this would have implied that there was no consistent change in the proportion of respondents recognizing the commercial from pre-campaign to post-campaign across the various provinces. A significant three-factor interaction would leave the two-factor interactions somewhat difficult to interpret, and a careful examination of the chi square values would be required.

A non-significant chi square for the three-factor interaction would make the interpretation of the two-factor interactions straightforward. For example, a significant chi square for the Recognition x Province table would imply that there were significant differences in the proportions of respondents recognizing the commercials among the various provinces. Moreover, according to the hypothesis described above, it was expected that the Recognition x Wave value would be significant. These analyses were performed, and the results are found in Tables 8 - 11. Because of the large number of tests of significance that were performed at this stage, it was decided that in order to keep the experiment-wise error rate to an acceptable level, the level of significance from any chi square must reach .01 to be considered as signficant.

Considering for example the multiple chi square analysis for the television commercials (Table 8), it was found that the three-factor interactions were all significant, except for the "marble" (bogus) recognition question. In that case, there were significant differences in reported recognition not only among the provinces, but from pre-campaign to post-campaign as well. However, it was found (See Appendix C, Table C.1) that the proportion of positive responses increased from a very small number to a slightly larger number. For example, in Alberta, the percentage rose from 0.5% to 3.0%. In any case, the maximum proportion of people responding positively to the television bogus question was 5.5%.

Despite the significant three-factor interactions for the legitimate television commercials, it was evident that the overwhelming contribution to the total chi square was found in the Recognition x Wave sub-table. For example, the total chi square for the "pumpkin" commercial was computed to be 3,529.6, of which 3,397.2 was attributed to the Recognition x Wave sub-table. Hence, the multiple chi square analysis indicated that while

	TOTAL	RECOGNITION BY PROVINCE	RECOGNITION BY WAVE	RECOGNITION BY PROV. BY WAVE
	(19 d.f.)	(9 d.f.)	(1 d.f.)	(9 d.f.)
EGG	3,568.3***	89.0***	3,407.9***	71.4***
PUMPKIN	3,529.6***	72.0***	3,397.2***	60.4***
COCONUT	2,839.0***	57.2***	2,751.7***	30.1***
MARBLE(a)	74.1***	33.2***	26.9***	14.0
OVERALL	4,167.9***	103.8***	3,973.3***	90.8***

(a) Indicates "Bogus" Recognition Question

*** Indicates significance at .001

TABLE 8: Chi Square Values from Multiple Chi Square Analysis of the Number of Respondents Recognizing the Television Commercials.

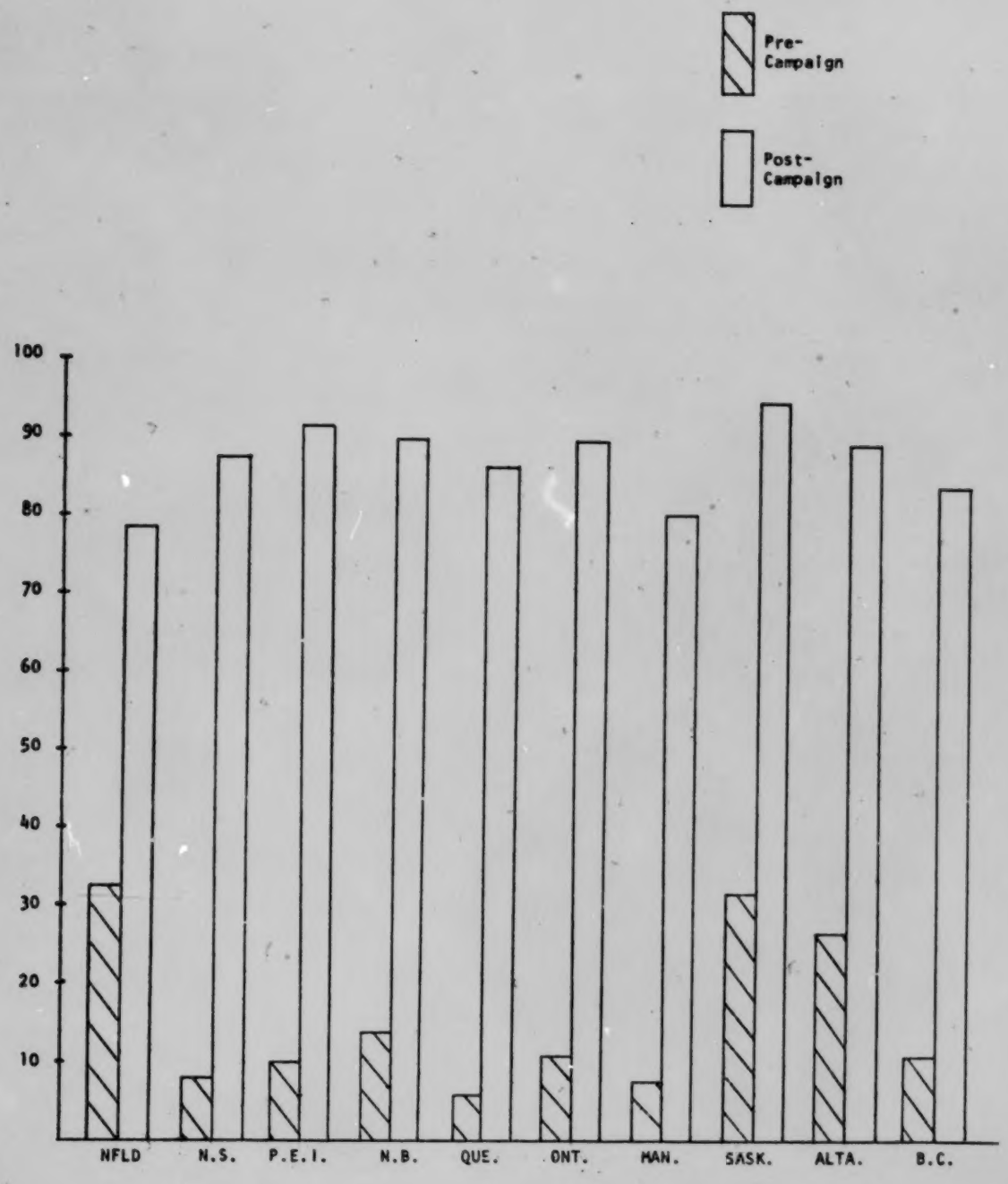

FIGURE 1: Percentages of Respondents Recognizing At Least 1 Television Commercial by Wave by Province

there were significant differences in reported recognition among the ten provinces, there was also a highly significant increase in reported recognition for each television commercial from pre-campaign to post-campaign. The proportions of respondents recognizing the television commercials in each province for pre-campaign and post-campaign are found in Appendix C.

Figure 1 depicts the percentages of respondents who reported to have recognized at least one of the television commercials, and it was clear from this plot that there were dramatic increases in reported recognition from pre-campaign to post-campaign. As well, there was some indication of a "spill over" effect from the development phase of the campaign. The pre-campaign figures in Newfoundland, Saskatchewan, and Alberta were noticeably higher than in the other seven provinces - for example, 7.5% in Manitoba versus 31.8% in Saskatchewan.

Multiple chi square analysis was also performed for the radio commercials (Table 9), and in this case, there were only seven provinces in the analysis since these commercials were not presented in Québec, Ontario and Alberta. There was a significant three-factor interaction for the "run over" commercial. However, in this case, as in the analysis of the television commercials, the chi square for the Recognition x Wave sub-table was several orders of magnitude larger than the value for the three-factor interaction, and this allowed a straightforward interpretation of the data. Hence, there were not only significant differences among the provinces, but also a highly significant increase in reported recognition from pre-campaign to post-campaign for this commercial.

The three-factor interactions for the "7/10" and "collide" commercials failed to reach significance at .01, and significant differences were also found among the provinces and between the waves for these commercials. Note that for the "bogus" recognition question (i.e., "teach"), there was no significant change in the proportion of respondents reporting to have recognized this commercial from pre-campaign to post-campaign. The individual proportions of respondents for these commercials are also tabulated in Appendix C.

	TOTAL	RECOGNITION BY PROVINCE	RECOGNITION BY WAVE	RECOGNITION BY PROV. BY WAVE
	(13 d.f.)	(6 d.f.)	(1 d.f.)	(6 d.f.)
SEVEN-TENTHS	264.0***	70.8***	179.8***	13.4*
RUN OVER	694.5***	65.8***	606.1***	22.6***
COLLIDE	211.5***	82.7***	118.3***	10.5
TEACH(a)	52.6***	47.5***	2.0	3.1
OVERALL	438.4***	55.4***	370.2***	12.8*

(a) Indicates "Bogus" Recognition Question

* Indicates significance at .05

*** Indicates significance at .001

TABLE 9: Chi Square Values from Multiple Chi Square Analysis of the Number of Respondents Recognizing the Radio Commercials

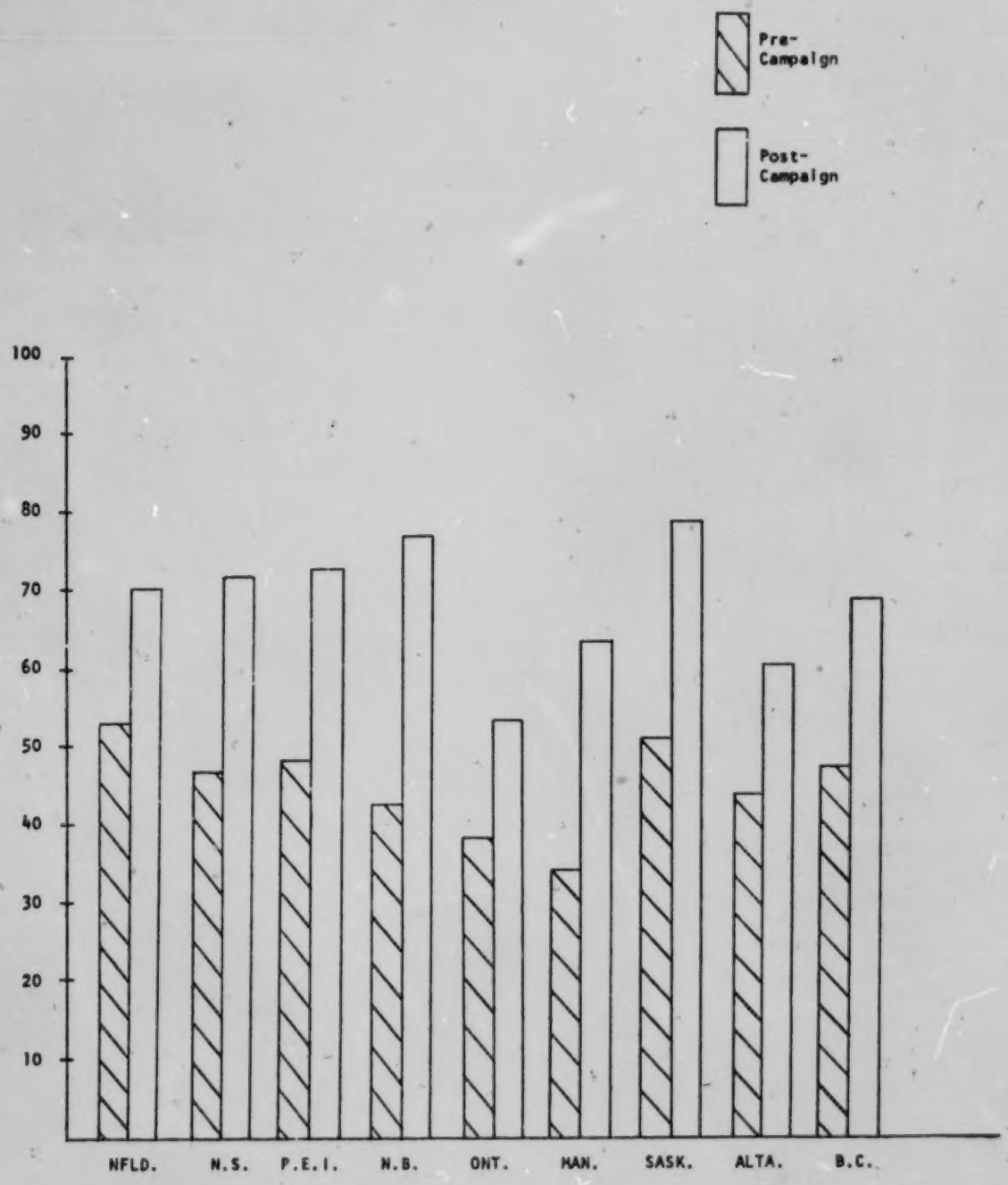

FIGURE 2: Percentages of Respondents Recognizing
At Least 1 Radio Commercial
by Wave by Province

The percentages of respondents who reported to have recognized at least one radio commercial are shown in Figure 2. There was some indication of a "spill over" effect from the Development phase. However, it also appeared that all the pre-campaign figures were high relative to those figures derived for the television commercials. It was suggested that this was a function of this medium itself. That is, the number of false-positive responses is generally related to the public's perceived likelihood of hearing a particular commercial, and it was difficult to design a recognition question specific to each radio commercial so that the respondent could readily identify it. Moreover, these radio commercials did not contain highly unusual material as did the television commercials.

For the "fragmented" newspaper advertisements (Table 10) there was very little significant change in those provinces (i.e., Newfoundland, Nova Scotia, and Saskatchewan) where they were printed from pre-campaign to post-campaign, with the possible exceptions of the man running into the telephone pole, the woman at the wheel showing the proper use of seat belts, and the weightlifter straining to keep a dumbbell raised over his head. For the "omnibus" newspaper ads, printed in P.E.I. New Brunswick Manitoba and British Columbia, none of the three-category interactions (Table 11) were seen to be significant. There were significant differences for both of these ads, not only among the appropriate provinces, but from pre-campaign to post-campaign as well.

The proportions of respondents who reported to have recognized at least one of the newspaper advertisements are depicted in Figure 3. From this figure, it was apparent that while there were some significant increases in reported recognition, these proportions were relatively low with respect to the television and radio commercials. For example, the proportions in P.E.I. rose from 6.5% on the pre-campaign data, to 17.8% on the post-campaign data. As well, there was some indication that the fragmented newspaper advertisements (possibly, by their number alone) were more likely to have been remembered than the omnibus advertisements. For instance, the proportion of reported exposure rose from 41.0% before the campaign to 48.0% after the campaign in Nova Scotia.

	TOTAL	RECOGNITION BY PROVINCE	RECOGNITION BY WAVE	RECOGNITION BY PROV. BY WAVE
	(5 d.f.)	(2 d.f.)	(1 d.f.)	(2 d.f.)
BOXER	19.2**	13.5**	0.07	5.6
TELEPHONE POLE	18.4**	3.2	8.0**	7.2*
JUMP SUIT	23.9***	3.3	8.6**	12.0***
WOMAN AT WHEEL	40.9***	17.4***	15.7***	7.8*
CRUTCH	12.9*	12.2**	0.34	0.36
ASTRONAUT	11.0	6.9*	0.87	3.3
OFF-BALANCE	32.3***	29.2***	0.58	2.5
WEIGHTLIFTER	13.6*	1.1	7.5**	5.0
SCENE	18.8**	18.0***	0.06	0.74
DOG ON PONY(a)	12.6*	10.8**	0.94	0.86
OVERALL	39.1***	16.8***	10.7**	11.6**

(a) Indicates "Bogus" Recognition Question

* Indicates significance at .05

** Indicates significance at .01

*** Indicates significance at .001

TABLE 10: Chi Square Values from Multiple Chi Square Analysis of the Number of Respondents Recognizing the Fragmented Newspaper Ads

	TOTAL	RECOGNITION BY PROVINCE	RECOGNITION BY WAVE	RECOGNITION BY PROV. BY WAVE
	(7 d.f.)	(3 d.f.)	(1 d.f.)	(3 d.f.)
BOXER-TELEPHONE	53.0***	17.2**	29.4***	6.4
WEIGHTLIFTER-SCENE	34.1***	9.9*	18.2***	6.0
DOG-GLASSES(a)	13.7	6.4	1.7	5.6
OVERALL	59.0***	16.4***	36.4***	6.2

(a) Indicates "Bogus" Recognition Question

* Indicates significance at .05

** Indicates significance at .01

*** Indicates significance at .001

TABLE 11: Chi Square Values from Multiple Chi Square Analysis of the Number of Respondents Recognizing the Omnibus Newspaper Ads

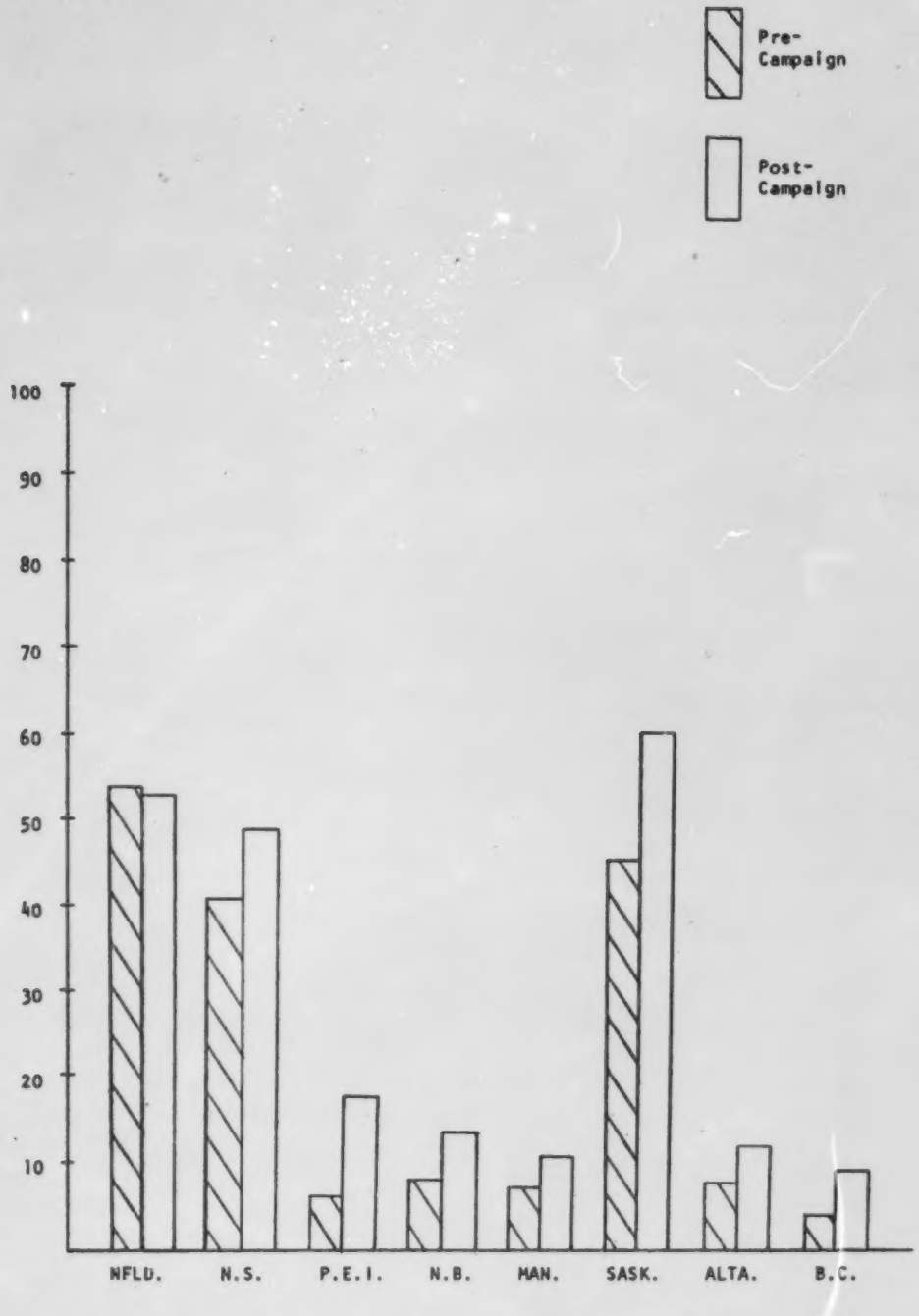

FIGURE 3: Percentages of Respondents Recognizing At Least 1 Newspaper Advertisement by Wave by Province

Although the radio commercials were not presented in Ontario or Alberta (or Québec), these recognition questions were asked in those versions of the questionnaire in an attempt to compare the responses in those provinces where the radio commercials were aired, to those provinces where they were not. The Ontario and Alberta data were pooled together to form one group, and these responses were compared to the data in the other provinces (excluding Québec) which were also pooled together to form a second group.

Ideally, it was expected that there would be no significant differences between the responses in the two groups for the pre-campaign data, but that there would be significant differences for the post-campaign data. Moreover, it was also expected that there would be no significant increase for the Ontario-Alberta group from pre-campaign to post-campaign, since the radio commercials were not presented there; but that there would be a significant increase for the other-provinces group.

These hypotheses seemed to be arguing for a significant three-category interaction between Recognition of a particular radio commercial (Yes/No), Wave (Pre/Post), and Province (Ontario-Alberta/Other-Provinces). A non-signficant three-factor interaction would have implied that there was an essentially consistent difference between the two groups for each of the two waves. A detailed examination of the chi square values would be required to see if this provided evidence against the hypotheses.

Of the three-factor interactions from the multiple chi square analysis (Table 12), the value for the "7/10" radio commercial failed to reach significance at .01. The individual chi squares revealed that there were significant differences between the two groups of provinces, and between the waves. That is, reported recognition of the "7/10" ad (see Appendix C) was higher in the other-provinces group than in the Ontario-Alberta group for both the pre-campaign and post-campaign data. This implied that fewer respondents in the Ontario-Alberta group than in the other-provinces group made false-positive recognitions in the pre-campaign survey, and that more respondents in the other provinces were able to correctly identify this radio commercial after the campaign, and hence this represented a highly favourable result.

	TOTAL	RECOGNITION BY PROV.	RECOGNITION BY WAVE	RECOGNITION BY PROV. BY WAVE
	(3 d.f.)	(1 d.f.)	(1 d.f.)	(1 d.f.)
SEVEN-TENTHS	253.0***	53.7***	193.0***	6.3*
RUN OVER	731.0***	47.2***	657.2***	26.6***
COLLIDE	176.2***	48.4***	100.8***	27.0***
TEACH(a)	12.5**	10.0**	1.9	0.6
OVERALL	460.1***	51.7***	398.5***	9.9**

(a) Indicates "Bogus" Recognition Question

* Indicates significance at .05
** Indicates significance at .01
*** Indicates significance at .001

TABLE 12: Chi Square Values from Multiple Chi Square Analysis of the Number of Respondents Recognizing the Radio Commercials in the Ontario-Alberta Group vs. the Other-Provinces Group

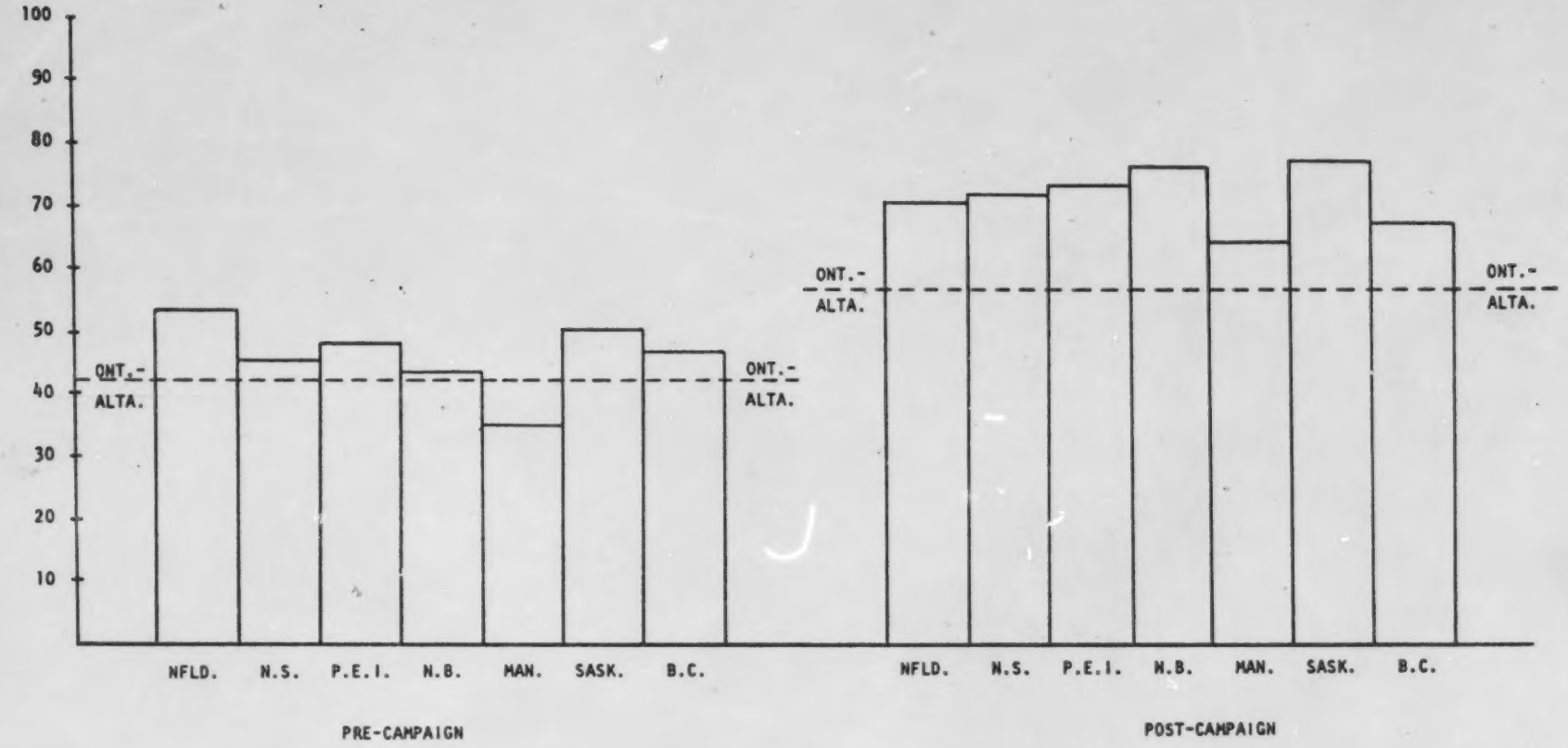

FIGURE 4: Percentages of Respondents Recognizing at Least 1 Radio Commercial by Province vs. the Ontario-Alberta Group by Wave

For the "collide" and "run over" commercials, the significant three-factor interaction suggested that the proportion of reported recognitions was not significantly different for the post-campaign data in Ontario and Alberta than in the other provinces. There was, however, a significantly higher proportion of positive recognitions after the campaign in the other provinces. The percentages of respondents who reported to have recognized at least one radio commercial by wave by group is included in Figure 4.

Summarizing, reported recognition of the radio commercials in Ontario and Alberta, where they were not available, increased from pre-campaign to post-campaign. Despite these increases, recognition of these commercials in the other provinces was significantly greater in the post-campaign survey than in Ontario and Alberta. This implied that the radio commercials received broad exposure in those provinces where they were available.

Remarks

These analyses confirmed that the advertising campaign, particularly the radio and television components, were well remembered by the respondents. All the television recognition questions experienced significantly more positive responses across the provinces, and the same was true of the radio commercials as well. The newspaper advertisements were not as well remembered as those in the other media. The individual omnibus ads were recognized more frequently than the individual fragmented advertisements.

For the most part, there were no significant increases in reported recognition of the "bogus" advertisements, with some minor exceptions for the television question. This suggested that the increases observed above represented reliable data. This was further confirmed with the radio recognition question comparisons with Ontario and Alberta, since the other provinces saw significantly higher proportions of positive responses for the post-campaign data than in the Ontario-Alberta group.

ATTITUDE CHANGES

There were nine questions which were asked to ascertain the respondent's attitudes concerning seat belts. Typically a statement was read to the subject, and he was required to express an opinion by using a 0 to 6 scale. Since grammatical forms were mixed in this section, the responses to some of the questions were transformed, so that a lower value indicated a more negative attitude, and a higher value indicated a more positive attitude consistently throughout this section.

As a result of the Seat Belt Education Campaign, it was expected that respondents on the post-campaign survey would relate significantly more positive attitudes concerning seat belts for the key attitude items than those from the pre-campaign survey. To test this hypothesis, an analysis of variance was performed. Analysis of variance is a statistical technique for partitioning the variation inherent in a dependent variable among those factors and their interactions which are thought to be accountable for this variation. The operating criterion is to maximize the variation partitioned into the various elements. The amount of variation that can be attributed to a particular element, divided by the variation introduced by chance alone (within the context of the particular model) is reported as the F-statistic, and by examining the various F-values, it can be determined which elements are associated with a significant amount of the variation in the dependent variable.

In this instance, each of the attitude items, in turn, was taken to be the dependent variable; and two factors, namely Province and Wave (i.e. Pre/Post) and their interaction were identified. If the interaction effect was found to be significant, then this would have implied that either the magnitude or the direction of change in the attitude item from pre-campaign to post-campaign was varying from one province to another. A significant interaction effect would render the interpretation of the main effects somewhat misleading, and would require a careful examination of the individual F-values.

A non-significant F-value for the interaction of Province and Wave, on the other hand, would allow a straightforward interpretation of the main effects. In this instance, a significant F-value for the

Province factor would serve to indicate that there were significant differences in the attitude concerning seat belts among the different provinces. According to our hypothesis, moreover, it was expected that the Wave factor would be significant for each of the key attitude items. An analysis of variance was performed for each of the attitude items, and the results are reported in Table 13.

Considering for example, the "thrown clear" attitude item, the interaction F-value was not seen to be significant. The Province factor however was found to be significant, and there was also seen to be a highly significant change from pre-campaign to post-campaign. Thus, because there was no significant interaction between these two factors, these results implied that there were significant differences in this attitude among the various provinces, and that there was a significant and essentially positive shift (see Appendix D, Table D.1) from pre-campaign to post-campaign. This was an important result since this was one of the key attitude items referring directly to the "pumpkin" television commercial and the "run over" radio ad.

The remaining two key attitude items did not change as dramatically. For the "bracing" attitude, which corresponded to the "coconut" television commercial and the "7/10" radio commercial, there was a significant interaction effect. Figure 5 shows a plot of the characteristics of this interaction, and it was evidently the combination of the large decrease in Québec and the smaller increases in the other provinces which resulted in the significant interaction effect. Hence, the significant wave effect indicated that there was a general trend towards a more positive attitude for this question after the campaign.

The only significant result for the "tossed" attitude, which was the thrust of the "egg" television commercial and the "collide" radio commercial, showed significant differences among the provinces. However, there was no significant shift in this attitude from pre-campaign to post-campaign. The means and standard deviations for each of the attitude questions for both pre-campaign and post-campaign are found in Appendix D.

There did not appear therefore to have been a wholesale shift in

ATTITUDE	MAIN EFFECTS		INTERACTION
	Prov (9 d.f.)	Wave (1 d.f.)	Prov x Wave (9 d.f.)
OVERCONFIDENT	8.626***	7.793**	2.418**
BRACING	2.524**	4.012*	2.267*
CITY	14.068***	4.278*	2.735**
TIGHTLY	6.510***	0.105	0.443
TOSSED	19.547***	3.636	0.840
CONTROL	29.066***	0.126	2.583**
THROWN CLEAR	13.333***	105.533***	0.753
SUPPORT/FATIGUE	30.085***	1.755	2.560**
FIRE/SINKING	13.457***	0.129	2.522**

* Indicates significance at .05
** Indicates significance at .01
*** Indicates significance at .001

TABLE 13: F-values for Main Effects and Interaction from Analysis of Variance of the Attitude Questions

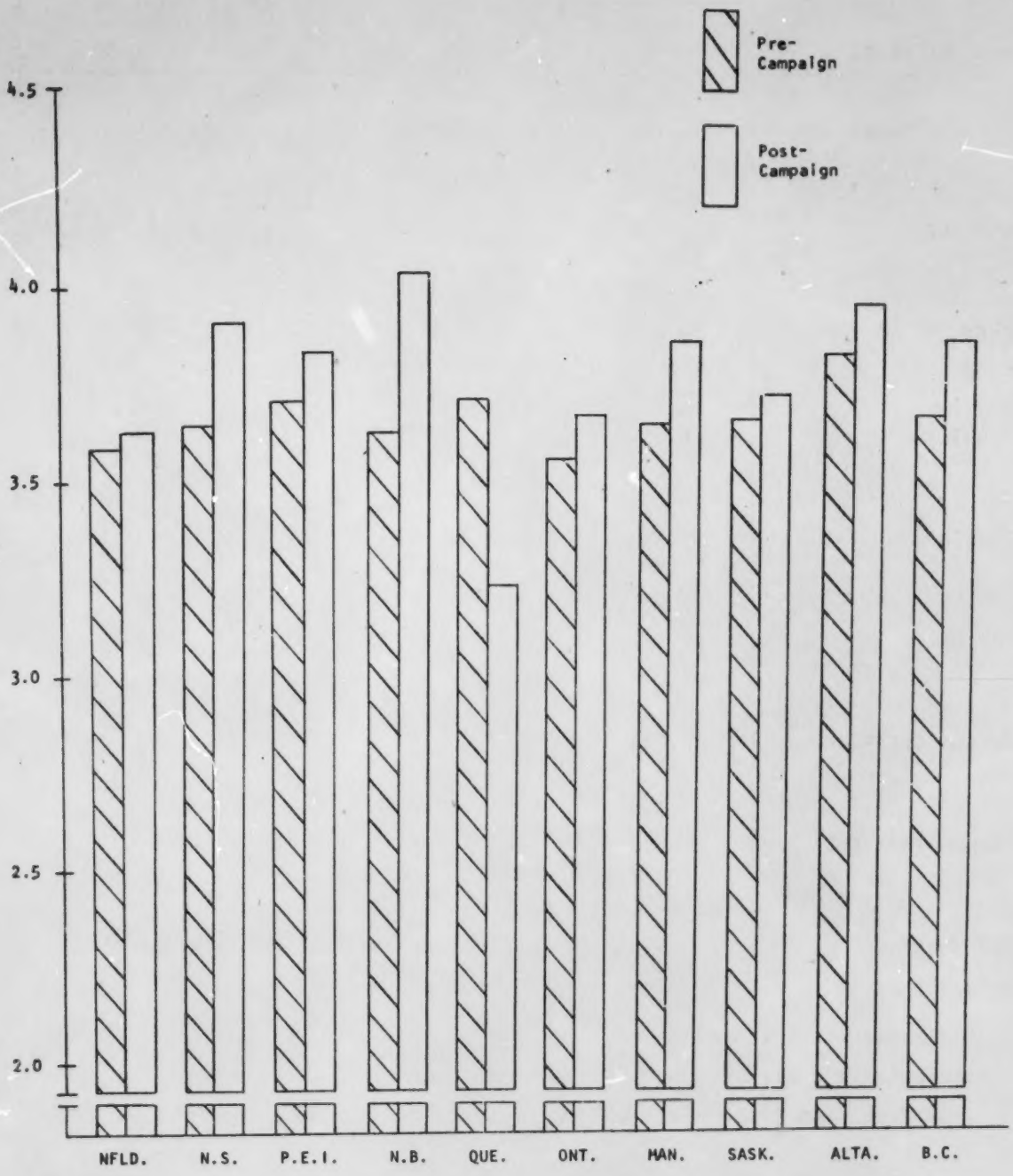

FIGURE 5: Mean Values to "Bracing" Attitude Question by Wave by Province

the public's attitudes concerning seat belts. There were sporadic positive shifts, but these appear to have been counterbalanced to a large degree by the negative movements in the means. The redeeming feature was the highly significant and essentially consistent change for the "thrown clear" attitude.

RELATIONSHIPS BETWEEN ADVERTISING AND ATTITUDES

In the previous sections, an attempt was made to show that the campaign was generally available to the public, and that there was some change observed in the public's attitudes concerning seat belts. This was accomplished by testing hypotheses of independence between the pre-campaign and the post-campaign data. In the following section, the relationship between the campaign elements and attitudes concerning seat belts was examined. Specifically, it was desired to determine which medium or combination of media was most highly related to positive attitudes concerning seat belts; whether the commercials were related to the target attitude items for which they were designed; and indeed what rôle, if any, the "bogus" recognition questions played in forming public opinion about seat belts.

These questions then really represented the core of the evaluation of the campaign. There were three media, and several advertisements within each medium, so that it was desirable to assess the relative merits of the various components as they related to the attitudes. Moreover, these analyses also have important implications insofar as similar campaigns sponsored by Transport Canada or other interested agencies are concerned. By weighting the various media and the various commercials, future campaigns will be in a position to employ only those components which can be expected to produce the most effective results.

At this stage several indicator variables were created, and they took on the values of 0 and 1 unless otherwise stated. Since the attitude items were already transformed, for the sake of convention, a "0" value represented a negative response, and "1" indicated a positive response consistently for these variables.

Different Components of the Campaign

In the first analysis, it was attempted to assess the weight of the media, or different combinations of the media on attitudes concerning seat belts. The technique of canonical correlation was employed, and

it assumes that coefficients can be found such that a linear combination of the target attitude items can be expressed as a linear combination of the variables representing the media combinations. The operating criterion is to maximize the correlation between these two sets of linear combinations.

If the campaign was a success, then it was expected that there would be a statistically significant correlation between attitudes and media exposure for the post-campaign data, but not for the pre-campaign data. As well, it was also expected that the overall canonical correlation would be significantly higher for the post-campaign data when compared to the pre-campaign data.

The coefficients of the different variables were also examined. Because of the way that the variables were defined, if the signs of the coefficients were all the same, i.e., all positive or all negative, then this indicated that there was a positive relationship between the attitude items and the media variables. If the signs were mixed, i.e., some signs positive and some negative, then this indicated that there was a negative association operating. The relative size of the coefficients within one linear combination in absolute value, served to indicate the relative importance of the variables to the linear combination as a whole.

Indicator variables for each of the media were defined, and they took on a value of "1" if the respondent reported to have recognized at least one of the corresponding commercials, and "0" otherwise. Since there were three media, there were $2^3 = 8$ possible combinations, and these combinations are best depicted in a Venn diagram, shown in Figure 6. This figure additionally includes the names, namely D1 to D7, of the variables created to represent these regions. Thus for example, if a respondent recognized at least one of the television ads, but none of the radio or newspaper advertising, then the variable D1 took on the value "1" and D2 to D7 were all set to "0". Similarly, if the respondent

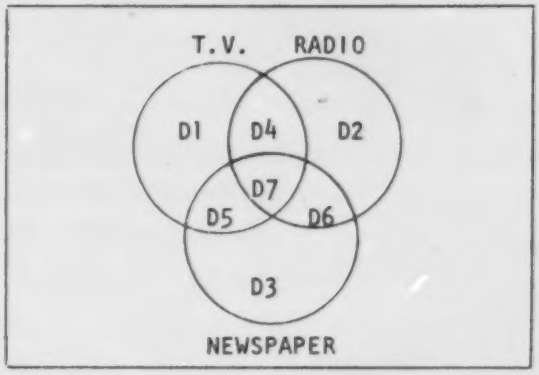

FIGURE 6: Illustration of Different Media Combinations.

recognized at least one newspaper ad and at least one radio commercial, but none of the television commercials, then D6 was set to "1", and the other variables took on the value "0". Moreover, if the respondent recognized none of the advertising in any of the media, then all of the variables were set to "0", thereby representing the null vector.

Considering the post-campaign data in Manitoba for example, the Venn diagram of Figure 7 shows the percentages of that sample which were found in each of the regions defined above. It appeared that because of the broad exposure received by the television component, and to a lesser degree by the radio component, the proportion of respondents recognizing the newspaper advertisements alone was very small, and this created serious problems in the computation of the statistics. Collapsing the three newspaper-related regions represented by the variables D3, D5 and D6 still yielded relatively low frequencies, for example 2.9% in the Manitoba post-campaign data. It was therefore unfortunately necessary to abandon partitioning the universe into mutually exclusive regions, and attention was focussed on the indicator variables for the three media defined above, and shown in Figure 8. Using these variables in the analyses meant that the investigation could not be resolved to the level of a particular combination of commercials; however, differences between the media or commercials within medium could still be made with a high degree of competence.

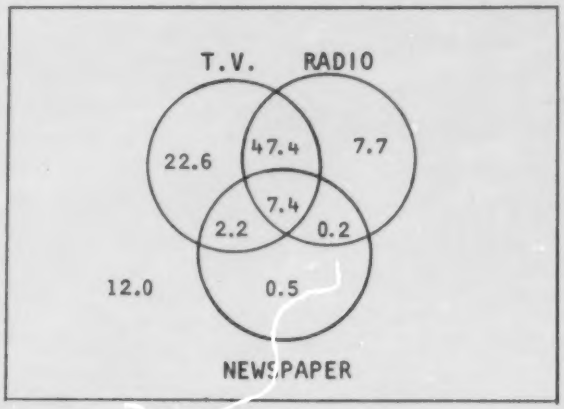

FIGURE 7: Percentages of Manitoba Post-Campaign Respondents Recognizing the Different Media Combinations

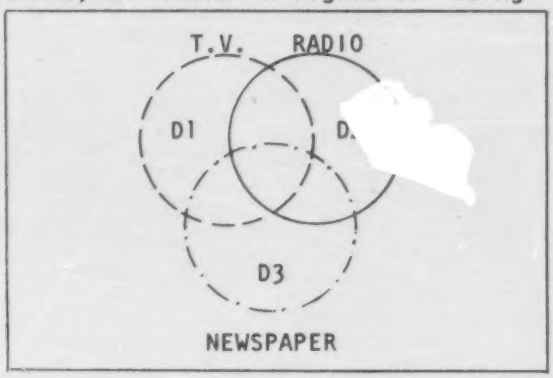

FIGURE 8: Illustration of Indicator Variables

Table 14 reports the coefficients and the overall canonical correlation for each province by time of survey for the key attitude items and the media indicator variables. Considering for example the post-campaign data in Manitoba, the overall canonical correlation was computed to be 0.2096 which was significant at less than .05. With the exception of the newspaper variable, the signs were all the same (viz., positive), so that the television and radio components related in a positive sense with the attitude items. (Similarly in P.E.I. where the signs are the same, in this case negative, with the exception of radio, so that newspaper and television related in a positive sense with the attitude variables).

In Manitoba, the "thrown clear" attitude had a coefficient of 0.9030 and clearly dominated the set of attitude coefficients. That is, the "thrown clear" attitude correlated at 0.9030 with the linear combination of the media variables. Moreover, of these media variables, television was the most important, and correlated at 0.8154 with the linear combination of the attitude items.

Overall, the canonical correlation for the post-campaign data was significant in four of the seven provinces, but there were no significant increases in the value from pre-campaign to post-campaign. The decline observed in P.E.I. was also not significant.

The "thrown clear" attitude item dominated in all provinces except P.E.I. where "tossed" had the largest coefficient (in absolute value). The television component was clearly dominant in Newfoundland, P.E.I. and Manitoba, and shared approximately equal importance with the newspaper component in New Brunswick and British Columbia. Of the remaining provinces, newspaper dominated in Nova Scotia, and the combination of newspaper and radio in Saskatchewan.

Thus, the "thrown clear" item correlated most highly with the combination of the media variables in all provinces except P.E.I. Of these three media variables, television either alone or in combination was seen to be the most important. In some instances, newspaper was the most important medium.

		ATTITUDE			MEDIA			CANONICAL	Z-SCORE:
		Bracing	Tossed	Thrown	Newsp.	Radio	T.V.	CORRELATION	DIFF.
NFLD.	Pre	-0.2546	-0.6859	0.7980	-0.2858	-0.6217	0.9102	0.1822	0.394
	Post	0.0203	-0.1898	1.0353†	0.0141	0.2442	0.9452	0.2091*	
N.S.	Pre	0.1393	0.7507	-0.7372	0.2481	-1.0121	-0.0978	0.1449	0.832
	Post	-0.4719	-0.0110	-0.8659	1.0179	-0.3530	-0.0361	0.2023	
P.E.I.	Pre	0.1673	-0.8969	-0.2400	0.8965	-0.5802	-0.0244	0.1501	-0.216
	Post	-0.2232	-0.6774	-0.5979	-0.4552	0.3356	-0.8432	0.1343	
N.B.	Pre	0.9588	-0.2675	0.1945	0.5811	0.7630	-0.1115	0.1858	0.467
	Post	0.1576	-0.2297	1.0339	-0.6552	0.1661	0.7537	0.2197*	
MAN.	Pre	0.9509	0.3138	0.1626	-0.5160	-0.3803	1.0078	0.1447	0.932
	Post	0.2448	0.1429	0.9030	-0.1421	0.4229	0.8154	0.2096*	
SASK.	Pre	-0.4012	0.4896	0.6499	-0.5570	-0.4224	0.7948	0.1092	0.522
	Post	0.7197	-0.0187	-0.7300	0.8163	-0.7175	0.0199	0.1454	
B.C.	Pre	0.2938	-0.9906	0.6567	0.2410	-0.7907	-0.5199	0.1587	0.789
	Post	-0.5634	0.3710	0.6804	-0.6994	-0.1804	0.6649	0.2125*	

* Indicates significance at .05

† Underlined figure(s) are those coefficient(s) which dominated the respective linear combinations

TABLE 14: Coefficients and Canonical Correlation Values from Canonical Correlation Analysis of Attitude Questions and Media Variables by Wave by Province

Specific Television and Radio Commercials on Their Target Attitude Items

For each of the key attitude items, a specific television and a specific radio commercial were designed and ultimately incorporated into the campaign. For example, the "tossed" attitude question referred directly to the "egg" television commercial and the "collide" radio ad. The relationship of these different pairs of commercials with the specific attitudes for which they were designed was explored next.

The technique of multiple regression was employed, and it may be considered as a simplified version of the canonical correlation technique used above. This approach assumes that the target attitude item can be expressed as a linear combination of the specific advertisements. The operating criterion here is to maximize the amount of variation in the attitude item that is explained by the combination of the commercials. By examining the F-statistic, it can be determined whether this combination explains a significant amount of the variation in the attitude item. Hence for the pre-campaign data, it was expected that recognition of these items would not explain a significant amount of the variation; whereas for the post-campaign data, it was expected that the pair of commercials would explain a statistically significant amount of the variation.

As with the previous analysis, the absolute values of the standardized coefficients were examined to determine which commercial was making the more important contribution to the combination as a whole. As well, the signs of the coefficients were examined to see if a particular advertisement was positively or negatively related to the attitude item.

In the example then, the "tossed" attitude item was the dependent variable. Two indicator variables were defined: the "egg" variable took on the value "1" if the respondent reported having recognized this commercial, and "0" otherwise. Similarly for the "collide" indicator variable. Additionally, a variable was defined which took on a value according to how many of the other legitimate ads were recognized from the set of television and radio commercials. Since there were two other legitimate ads in each of these media, this variable could take on the values of 0 through 4. This had the effect of weighting the respondent

according to how many of the other ads were recognized. This analysis was performed for each of the target attitude items for the pre- and post-campaign data, and the standardized coefficients, and overall F-values are reported in Table 15.

Considering the "tossed" attitude item, and the analysis of the P.E.I. data, the overall F-value for the pre-campaign data was $F(3,311) = 0.7506$, or $F(311,3) = 1.3323$ which was not significant at .05. For the post-campaign analysis, $F(3,365) = 4.0588$ which was significant at less than .01. That is, whereas the linear combination of the reported media exposure variables did not explain a significant amount of the variation in the attitude item for the pre-campaign data, it did represent a highly significant amount for the post-campaign data. The standardized coefficient for the egg variable clearly dominated the other two coefficients, and was significant at less than .001. The sign was positive, so that the "egg" television commercial had a highly significant and positive relationship with the "tossed" attitude item in P.E.I. The magnitudes of the other variables were very small, and the signs were negative, which indicated that the other variables had a minor negative influence on this attitude item.

The overall F-value for the "bracing" attitude failed to reach significance in any province. Moreover, neither the "7/10" radio commercial nor the "coconut" television commercial had any significant relationship with this attitude. This was virtually the case for the "tossed" attitude item as well with the exception of P.E.I. and Saskatchewan. In Saskatchewan, however, the number of other legitimate ads recognized was seen to be the most important. The "egg" television ad was significant in P.E.I. as reported above, and also in British Columbia at less than .05; the overall F-value in British Columbia just failed to reach significance at .05.

The "run over" radio commercial in combination with the "pumpkin" television commercial produced quite different results. In this instance, the linear combination of reported media exposure explained a significant amount of the variation in the "thrown clear" attitude in all provinces except Nova Scotia and P.E.I. for the post-campaign data. The signs of the coefficients for the post-campaign analysis were all positive with

		BRACING ATTITUDE				TOSSED ATTITUDE				THROWN CLEAR ATTITUDE			
		7/10	Coconut	Others	F-value	Collide	Egg	Others	F-value	Run-Over	Pumpkin	Others	F-value
NFLD.	Pre	0.0788	-0.0147	0.0194	0.8942	0.1202*	-0.0293	-0.0095	1.6487	-0.0937	0.0899	0.0334	1.7669
	Post	0.0523	-0.0616	0.0177	0.7032	-0.0352	0.0364	-0.0029	0.3307	0.1835***	0.1870***	0.1165	10.8434***
N.S.	Pre	0.0360	0.0361	-0.0160	0.3331	-0.0339	0.0303	-0.0646	0.9096	-0.0622	-0.1013	0.0994	2.1927
	Post	-0.0013	0.0415	-0.0083	0.1819	-0.0421	0.0426	-0.0761	1.0469	0.0857	0.0117	0.0440	1.6473
P.E.I.	Pre	-0.0647	-0.0551	-0.0653	1.0923	-0.0185	-0.0734	0.0559	0.7506	0.0182	0.0189	0.0170	0.1626
	Post	0.0619	0.0062	-0.0473	0.5201	-0.0373	0.1830***	-0.0255	4.0588**	-0.0852	0.0135	0.0782	1.1534
N.B.	Pre	0.0752	0.1150	0.0236	2.3274	-0.0413	0.1056	-0.0894	1.5402	0.0035	0.0298	-0.0346	0.1559
	Post	-0.0057	-0.0370	0.0611	0.3718	0.0540	-0.0020	0.0094	0.3860	0.1302*	0.1159*	0.0421	6.0726***
MAN.	Pre	-0.0998	-0.0274	0.1402*	2.4588	-0.1272*	0.0176	-0.0360	2.5107	0.0739	0.0745	-0.1269*	2.3593
	Post	-0.0416	-0.0432	0.1594**	2.3105	-0.0110	-0.0296	0.1418*	1.9339	0.1225*	0.1428*	0.0088	5.9356**
SASK.	Pre	0.0023	-0.0624	0.0350	0.3911	0.0268	0.1056	-0.1040	1.4612	0.0170	0.0450	-0.0367	0.2635
	Post	0.0391	-0.0250	-0.0245	0.3107	-0.0298	0.0347	0.1313*	2.6060*	0.1233*	0.0401	0.1112*	5.7264**
B.C.	Pre	0.0002	-0.0127	-0.0724	0.7233	0.0611	0.0085	0.0649	1.1297	-0.0355	0.0378	-0.0941	1.3317
	Post	0.0214	0.0435	-0.0992	0.9127	-0.0142	0.1291*	0.0286	2.5871	0.0361	0.1316*	0.0559	4.2582**

* Indicates significance at .05

** Indicates significance at .01

*** Indicates significance at .001

TABLE 15: Standardized Coefficients and Overall F-values from Multiple Regression Analysis of Attitude Questions and Specific Radio and Television Commercials by Wave by Province

the exception of "run over" in P.E.I., and this indicated that the commercials had a positive influence on this attitude item. Both the radio and television commercials exerted a significant influence in Newfoundland, New Brunswick, and Manitoba; whereas in British Columbia, only the "pumpkin" commercial was significant, and in Saskatchewan, only the "run over" ad was significantly related to this attitude item. It was clear from these analyses that the combination of the "run over" radio commercial, and the "pumpkin" television ad produced the most consistently positive relationship with the corresponding attitude item. Of these, the "pumpkin" was significant in four provinces, and "run over" in four as well. Unfortunately, the "coconut" - "7/10" combination failed to explain a significant amount of the variation in any province.

The Television Commercials

Because of the broad exposure received by the television component of the campaign, it was decided to investigate the relationship of the television commercials with the target attitudes concerning seat belts. Towards this end, canonical correlation was used to see if the commercials as a whole related to the key attitude items, and to weight the various elements to gain insight into their relative orders of importance.

As before it was expected that positive responses to the television recognition questions would not correlate significantly with the key attitude items for the pre-campaign data, but would indicate a significant relationship for the post-campaign data. Table 16 reports the derived coefficients and the overall canonical correlation for each province by time of survey.

Considering for example the results in Ontario, the post-campaign canonical correlation was computed to be 0.2297 which was significant at less than .05, however this was not seen to be significantly higher than the pre-campaign value. The signs of the coefficients were all negative, which indicated that because of the way that the variables were defined, these television commercials related in a positive sense to

		ATTITUDE			TELEVISION			CANONICAL	Z-SCORE:
		Bracing	Tossed	Thrown	Egg	Pumpkin	Coconut	CORRELATION	DIFF.
NFLD.	Pre	-0.1964	0.5999	-0.8908	-0.4876	-0.7792	0.1813	0.1388	1.819
	Post	0.0567	0.0432	-1.0021†	-0.4283	-0.5429	-0.2570	0.2630**	
N.S.	Pre	0.4022	0.2788	0.8993	0.5518	-0.8512	0.2351	0.1306	-0.169
	Post	-0.2385	-0.0279	0.9825	1.0135	-0.0510	0.0096	0.1196	
P.E.I.	Pre	0.2678	0.8584	-0.6575	-0.7428	-0.2799	-0.3602	0.1047	1.397
	Post	0.0874	0.8079	0.4579	0.9024	-0.3269	0.3736	0.2081	
N.B.	Pre	0.6935	-0.2774	-0.5099	-0.4229	-0.2600	0.9536	0.1944	0.225
	Post	-0.1228	0.3622	-1.0402	-0.2319	-0.5861	-0.4201	0.2113	
QUE.	Pre	-0.0878	0.9159	-0.5674	0.2921	-0.7925	-0.5318	0.1553	-0.081
	Post	0.4943	-0.0273	-0.7778	0.1542	-0.9761	-0.1759	0.1496	
ONT.	Pre	0.0271	0.6702	-1.0128	0.0197	0.8471	0.4854	0.1219	1.551
	Post	-0.1978	-0.5326	-0.6901	-0.0073	-0.7976	-0.3936	0.2297*	
MAN.	Pre	-0.9450	0.1513	-0.3832	-0.2653	-0.9917	0.2652	0.1520	0.528
	Post	-0.2437	-0.1955	-0.8815	-0.1152	-0.8519	-0.1505	0.1884	
SASK.	Pre	-0.2732	0.3244	0.8184	0.9600	-0.3577	0.3094	0.1053	1.326
	Post	0.1096	-0.4045	-0.8160	-0.3974	-0.2208	-0.6854	0.1963	
ALTA.	Pre	0.5313	0.0752	0.8264	0.6632	0.4803	0.1097	0.1898	0.540
	Post	-0.4580	0.3179	-0.9297	-0.3405	-0.8813	0.2555	0.2270*	
B.C.	Pre	-0.4486	0.9573	-0.5253	0.0565	0.4934	0.8281	0.1217	1.819
	Post	-0.4926	0.3640	0.7316	0.7357	0.3907	0.0319	0.2471**	

* Indicates significance at .05

** Indicates significance at .01

† Underlined figure(s) are those coefficient(s) which dominated the respective linear combinations

TABLE 16: Coefficients and Canonical Correlation Values from Canonical Correlation Analysis of Attitude Questions and Television Commercials by Wave by Province

the key attitude items. The linear combination of the commercials was most highly correlated to the "thrown clear" attitude item, with a coefficient of -0.6901. The "pumpkin" commercial correlated at 0.7976 with the combination of the attitude items. This combination of dominating variables was encouraging in view of the fact that the "pumpkin" commercial was specifically aimed at this attitude.

From the remaining table, the pre-campaign canonical correlation was not significant in any of the provinces, but the post-campaign statistic was seen to be significant in Newfoundland, Alberta, and British Columbia, as well as in Ontario. The relationship was not significantly increased in any of the ten provinces, while non-significant decreases were observed in Nova Scotia and Québec.

The variables which dominated their respective linear combinations were "correct" in every province except Nova Scotia, Saskatchewan, and British Columbia. For example, the "pumpkin" - "thrown clear" combination dominated in Newfoundland, New Brunswick, Québec, Ontario, Manitoba, and Alberta; while the "egg" - "tossed" pair dominated in P.E.I. Overall, the "thrown clear" correlated most highly with the linear combination of the television commercials in nine of the ten provinces. The "pumpkin" dominated in six of the provinces, and the "egg" was important in three.

The Effects of False-Positive Responses

In the section on exposure to the campaign it was pointed out that the bogus recognition questions were used to indicate that the differences observed in the responses to the legitimate advertisements did in fact represent reliable data. That is, the proportions of respondents answering positively to the legitimate recognition questions increased significantly from pre-campaign to post-campaign. Yet, at the same time, there were only minor significant increases for the bogus recognition questions, thereby implying that the increases observed did in fact occur. The bogus recognition questions can be examined in the same way at this stage. For example, it had been shown that there were some significant relationships between positive attitudes concerning

seat belts and reported recognition of the various elements of the campaign. If it could be shown that these positive attitudes were significantly related to reported recognition of only those elements which were actually shown and not to reported recognition of "bogus" commercials, then this would have indicated that the relationships derived above were in fact authentic relationships.

The pre-campaign data provided a considerable source of information from which to assess the contribution of false-positive responses. That is, since the pre-campaign data (by definition) was collected immediately preceeding the presentation of the campaign, every positive response to the recognition questions, particularly the legitimate recognition questions, represented a false-positive response. Hence, if reported recognition of these items was significantly related to positive attitudes concerning seat belts, this should have become evident in the analysis of the pre-campaign data.

For example, in the first analysis of this section (see Table 14), it was attempted to assess the relationship of having been exposed to the different components of the campaign with positive attitudes concerning seat belts, and significant relationships were found in Newfoundland, New Brunswick, Manitoba, and British Columbia after the campaign. However, there were no significant relationships for the pre-campaign data in any province. That is, the respondent's attitudes concerning seat belts were independent of the fact that he reported to have recognized at least one commercial in one of the media.

Similarly in Table 16, the relationship between having been exposed to the television commercials and positive attitudes concerning seat belts was explored. Again, the canonical correlation was found to be significant in four of the provinces after the campaign, but it was not significant in any province for the pre-campaign data. It would therefore appear that attitudes concerning seat belts were independent of (falsely) reported exposure to the television commercials.

In the third analysis of this section, the relationship between a particular attitude concerning seat belts with exposure to the specific commercials directed toward that attitude was examined. From Table 15, it was found that none of the pre-campaign F-values were significant.

For example, the "run over" - "pumpkin" combination produced significant results in five provinces after the campaign, but was not significant in any province for the pre-campaign data. In this case, some of the individual commercials were found to be significant, notably the "collide" radio ad in both Newfoundland and Manitoba. Nevertheless, since the overall F-values failed to reach signficance, the implications were the same as described above.

More directly, an analysis was designed in an attempt to quantify the contribution of false-positive responses. Two media variables were defined at this point. One variable took on the value "1" if the respondent reported to have recognized at least one legitimate ad, and "0" otherwise. Similarly, the second variable took on the value "1" if the respondent reported to have recognized at least one of the bogus ads, and "0" otherwise.

Canonical correlation was again employed, however the interpretation of the results was completely different from those used in the previous analyses. There were several results which could have combined to produce the worst possible case: the pre-campaign canonical correlation being non-significant; and the post-campaign value being not only significant, but significantly higher than the pre-campaign data. The other results referred to the coefficients derived for the legitimate and bogus indicator variables. If the "bogus" coefficient dominated its linear combination and had the same sign as the coefficients of the attitude items, then this would have implied that positive attitudes concerning seat belts were highly related to the reported recognition of the bogus items, and this of course represented the worst possible case.

If, on the other hand, the sign of the bogus item was <u>opposite</u> to those derived from the attitude items, then this would have implied that positive attitudes concerning seat belts were highly related to <u>avoiding</u> making false-positive responses. This would suggest that those people with positive attitudes were able to differentiate between commercials which were actually shown, and those which were not.

The most favourable position was observed when the coefficient of the legitimate recognition variable dominated the linear combination.

That is, positive attitudes concerning seat belts were significantly related to the type of recognition made, and of these, recognizing legitimate advertisements was more important than recognizing bogus advertisements. Finally, a neutral position was observed when the post-campaign canonical correlation was not found to be significant, regardless of what happened to the other criteria.

These analyses were performed, and the results are reported in Table 17. For example, in New Brunswick, not only was the pre-campaign canonical correlation non-significant, and the post-campaign value significant at less than .001, but the difference was also significant at less than .05. The bogus recognition variable revealed a coefficient of 0.8192, and this dominated the linear combination. However, the sign of the coefficient was for the most part opposite to those derived for the key attitude items, and this suggested that positive attitudes concerning seat belts were highly related to avoiding making false-positive recognitions. This was virtually the case in Newfoundland as well, and the post-campaign value was also significant at less than .001.

Neutral positions were found in Nova Scotia, P.E.I., Québec, Ontario, Saskatchewan, Alberta, and British Columbia. The significance of the pre-campaign value in Alberta was unimportant in view of the fact that the post-campaign value did not reach significance. In Manitoba, the post-campaign canonical correlation was significant at less than .05, however the coefficient of the legitimate ad variable dominated that linear combination, and this represented a complimentary result.

Summarizing, there was very little evidence to suggest that false-positive responses were relating to attitudes concerning seat belts. From the previous analyses in this section, none of the pre-campaign statistics were found to be significant, and the final analysis revealed that for the most part, false-positive responses took a neutral position. Newfoundland and New Brunswick were the exceptions however, and there was some indication that positive attitudes were highly related to the respondent avoiding making false-positive responses.

		ATTITUDE			RECOGNITION TYPE		CANONICAL CORRELATION	Z-SCORE: DIFF.
		Bracing	Tossed	Thrown	Legitimate	Bogus		
NFLD.	Pre	0.3397	0.2545	-0.9204	-0.0855	1.0179	0.1912*	0.865
	Post	0.1791	-0.1412	-0.9137†	-0.5595	0.8775	0.2505***	
N.S.	Pre	0.7078	-0.6461	0.3330	0.0992	0.9640	0.0610	0.128
	Post	0.0237	-0.9506	-0.1995	0.4877	0.8473	0.0701	
P.E.I.	Pre	-0.7062	0.0097	0.6671	1.0070	-0.5543	0.1397	0.088
	Post	-0.0049	-0.5048	-0.7748	-0.7364	0.7715	0.1462	
N.B.	Pre	0.9266	0.0531	0.4600	1.0494	-0.4349	0.1686	2.056*
	Post	-0.2375	-0.1464	-0.9216	-0.6690	0.8192	0.3119***	
QUE.	Pre	-0.6390	-0.6047	0.6504	0.9971	0.0091	0.1135	-0.364
	Post	0.1570	-0.1480	1.0350	0.8445	0.4632	0.0880	
ONT.	Pre	-0.1785	1.0173	-0.5894	0.9181	-0.5100	0.1174	0.643
	Post	0.1630	0.8874	0.2610	0.9409	-0.3887	0.1630	
MAN.	Pre	-0.0635	-1.0181	0.1028	0.0946	0.9673	0.1057	1.359
	Post	-0.0891	-0.0232	1.0095	0.9060	-0.5891	0.1989*	
SASK.	Pre	0.1918	-0.3231	-0.8407	0.1181	0.9620	0.1661	-0.165
	Post	-0.3898	0.0323	-0.9075	0.1408	0.9804	0.1544	
ALTA.	Pre	0.6318	0.1730	0.7141	0.9945	-0.1499	0.1773*	-0.791
	Post	0.7263	-0.0279	0.7100	0.9836	0.1284	0.1222	
B.C.	Pre	-0.2455	0.6494	-1.0181	0.6450	0.6375	0.1332	0.546
	Post	0.1508	-0.2247	-0.9191	-0.7873	0.7310	0.1709	

*Indicates significance at .05

***Indicates significance at .001

† Underlined figure(s) are those coefficient(s) which dominated the respective linear combinations

TABLE 17: Coefficients and Canonical Correlation Values from Canonical Correlation Analysis of Attitude Questions and Recognition Type by Wave by Province

Remarks

These analyses were trying to determine which components of the campaign were most highly related to key attitudes concerning seat belts. Conversely, it was also attempted to indicate which of these attitude items were related to the campaign as a whole. From the previous sections it had been shown that the television and radio components received good exposure, and that the "thrown clear" attitude item was consistently more positive after the campaign than before.

The first analysis indicated that the television component was most highly correlated to attitude items in four of the seven provinces. The newspaper component dominated in three of the provinces, yet by the sign of the coefficients, it was seen that the influence was essentially negative with respect to the other media. The commercials as a package related most highly to the "thrown clear" attitude item. This was true in every province with the exception of P.E.I. where the "tossed" attitude was more important.

Each television commercial had a corresponding radio commercial, and it was attempted to ascertain the relative importance of the two media in relating to positive attitudes concerning seat belts. Overall, the combination of the "coconut" television commercial and the "7/10" radio ad failed to explain a significant amount of the variation in the "bracing" attitude item in any province. On the other hand, the "pumpkin" - "run over" combination did account for a significant amount of the variation in five of the seven provinces. Not only was the "pumpkin" commercial important, but the "run over" ad was also important in four of these five provinces. Again, the "egg" - "collide" combination was important in P.E.I.

Considering the television commercials in isolation from the rest of the campaign, it appeared that the "pumpkin" commercial showed the greatest degree of association with the attitude items, while the "egg" commercial was important in three of the provinces. The television commercials as a whole were highly related to the "thrown clear" attitude item throughout the provinces. The only exception was in P.E.I. where the "tossed" attitude item was most highly related to exposure to the television commercials.

Finally, there was no evidence to suggest that false-positive responses were playing any rôle in the above analysis. For the most part they appeared to have taken a neutral position. That is, while positive attitudes concerning seat belts were not significantly correlated with reported recognition of the legitimate ads (at least in the context of this particular analysis), they were also not significantly correlated with reported recognition of the bogus ads. There was some indication in Newfoundland and New Brunswick that positive attitudes were actually related to the avoidance of making false-positive recognitions.

ANCILLARY EFFECTS OF THE CAMPAIGN

In addition to the assessment of attitude changes with respect to the Seat Belt Education Campaign, the evaluation was also designed to determine whether the campaign produced any change in reported seat belt use, or reported favourability to a compulsory seat belt law. It was tempting to consider these as the most important feedback from the campaign; however, it must be reiterated that the primary function of the campaign was to make information available to the public rather than scaring the public into buckling up.

The analyses in this section centered on the two variables: reported seat belt use, and favourability to legislation. Specifically, if the campaign achieved the desired secondary effects, it was expected that respondents would report wearing seat belts significantly more often, and that they would be significantly more favourable to seat belt legislation. An analysis of variance was performed with two factors, namely Province and Wave, for each of these secondary effects, and the results are reported in Table 18.

VARIABLE	MAIN EFFECTS		INTERACTIONS
	Province	Wave	Prov. x Wave
SEAT BELT USE (incl. Ont.)	88.957***	60.747***	25.249***
SEAT BELT USE (excl. Ont.)	35.001***	6.952**	0.521
SEAT BELT FAVOURABILITY	26.904***	0.939	2.442**

** Indicates significance at .01

*** Indicates significance at .001

TABLE 18: F-values for Main Effects and Interaction from Analysis of Variance of the Secondary Attitude Questions

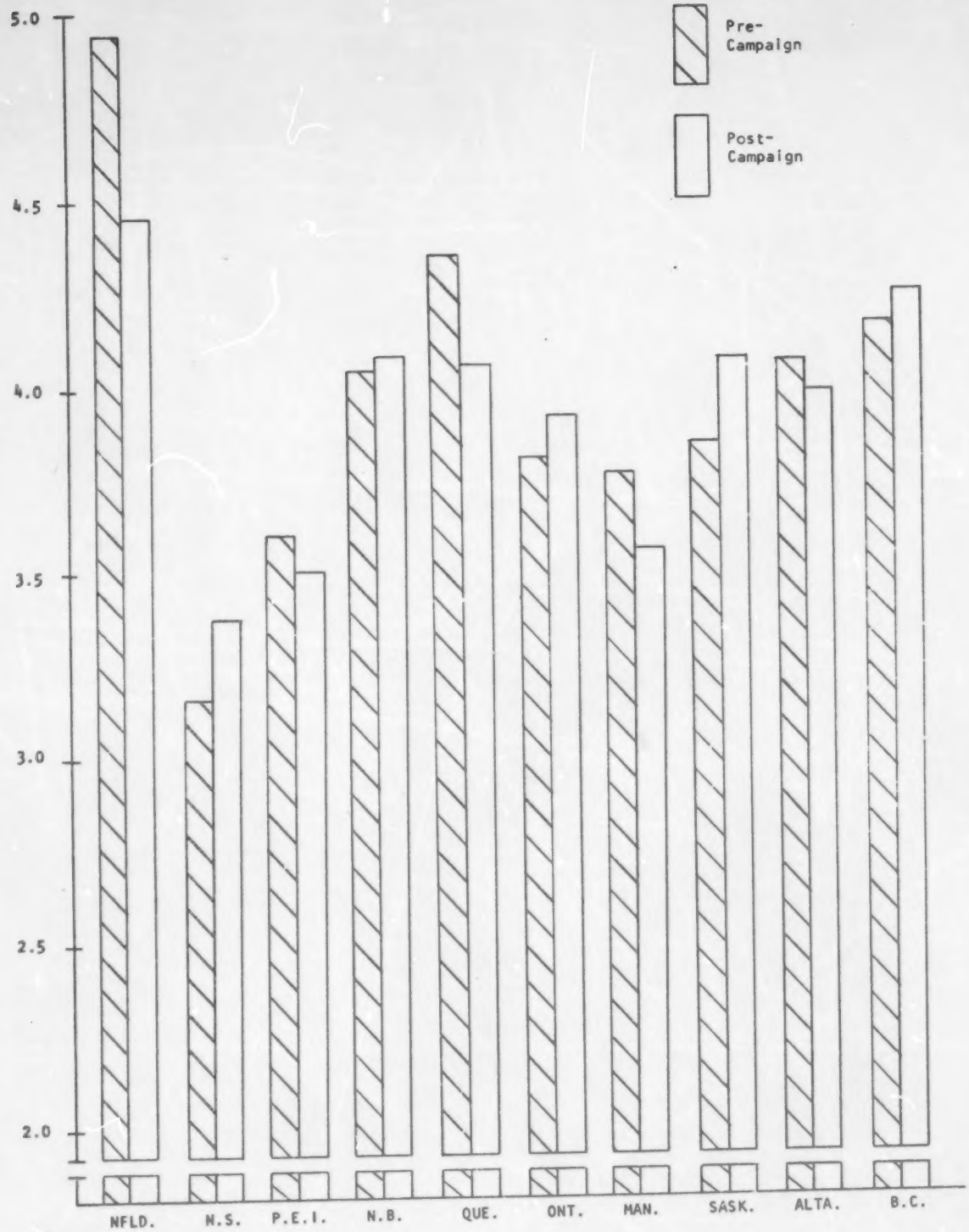

FIGURE 9: Mean Values to Favourability Attitude Question by Wave by Province

For example, the analysis of reported seat belt use (out of the last 10 trips) indicated that both factors and their interaction were significant at less than .001. However, because of compulsory seat belt legislation, it was expected that the Ontario post-campaign mean would be considerably higher than any of the other values, and may have been overshadowing the effects of the campaign itself. The analysis of variance was repeated, this time excluding Ontario, and the results revealed that there was no significant interaction effect. However, both the Province and the Wave main effects were found to be significant, indicating that not only were there significant differences among the nine provinces, but that there was also a significant and consistent increase (see Appendix D, Table D.2) in reported seat belt use from pre-campaign to post-campaign.

The analysis of favourability to compulsory seat belt legislation reported an interaction effect at less than .01, indicating that the magnitude or direction of change was varying from province to province. This interaction effect is plotted in Figure 9, and evidently, it was due to the decreases observed in five of the provinces, notably Newfoundland and Québec, and the increases observed in the remaining five provinces.

It would therefore appear that there was a significant trend to increased seat belt use across the provinces. There was of course a highly significant increase in Ontario, but it seemed likely that this was due to compulsory seat belt legislation. Favourability to legislation generally split between those provinces where it increased after the campaign, and those provinces where it decreased, and this provided a significant interaction.

The Television Commercials

In this analysis, the relationship between the combination of the television commercials with the secondary variables was explored. Canonical correlation was used, and it was hypothesized that there would be no significant relationship between these two sets of linear combinations for the pre-campaign data; but that the canonical correlation would be

		SEAT BELT		TELEVISION			CANONICAL CORRELATION	Z-SCORE: DIFF.
		Use	Favour.	Egg	Pumpkin	Coconut		
NFLD.	Pre	0.8599	0.3904	0.0434	0.9803	0.0069	0.1710	-0.237
	Post	0.6692†	0.6268	0.0408	0.9825	-0.0031	0.1542	
N.S.	Pre	1.0993	-0.4879	0.8270	0.5344	-0.0853	0.1133	0.797
	Post	1.0921	-0.2637	0.4287	-0.0236	0.7466	0.1688*	
P.E.I.	Pre	1.0028	-0.6217	-0.0997	-0.0302	1.0207	0.1032	0.476
	Post	1.0313	-0.2563	0.4648	0.0972	0.7646	0.1374	
N.B.	Pre	0.8662	0.3007	0.1662	0.6638	0.5765	0.1327	0.236
	Post	1.0565	-0.2825	-0.9807	0.6778	0.4976	0.1504*	
QUE.	Pre	0.7255	0.4730	-0.8422	0.4616	0.6348	0.1212	0.499
	Post	0.2284	0.8958	0.0558	-0.5452	1.0615	0.1562*	
ONT.	Pre	-0.3428	1.0809	0.5260	0.6826	0.3114	0.1278	-0.467
	Post	0.0192	0.9916	1.0707	-0.2634	0.0092	0.0957	
MAN.	Pre	0.0864	0.9676	0.7609	0.2468	0.4365	0.1519	-0.047
	Post	0.0786	0.9726	-0.6151	1.0033	0.3002	0.1486	
SASK.	Pre	-0.1608	1.0466	-1.0375	0.5211	0.7470	0.1096	1.016
	Post	0.9326	0.1538	0.3237	0.4246	0.5863	0.1793*	
ALTA.	Pre	0.9656	0.0894	-0.3447	0.3642	0.9045	0.1093	0.651
	Post	0.2986	0.8620	0.5045	-0.1941	-0.9687	0.1544*	
B.C.	Pre	0.5429	0.6671	0.5039	-0.5012	0.7665	0.0965	0.147
	Post	1.0219	-0.3270	0.2223	-1.1028	0.9161	0.1069	

*Indicates significance at .05

† Underlined figure(s) are those coefficient(s) which dominated the respective linear combinations

TABLE 19: Coefficients and Canonical Correlation Values from Canonical Correlation Analysis of Secondary Attitude Questions and Media Variables by Wave by Province

significant for the post-campaign data. The derived coefficients and the overall canonical correlations are found in Table 19.

Considering for example the Saskatchewan data, the overall canonical correlation increased (non-significantly) from 0.1096 on the pre-campaign data, to 0.1793 on the post-campaign data, which was significant at less than .05. Of the television commercials, the "coconut" ad overshadowed the other two commercials, and correlated at 0.5863 with the linear combination of the seat belt attitudes. The seat belt "use" variable dominated the "favourability" variable, and correlated at 0.9326 with the television ads. That is, the television commercials were more highly related to the number of times that a subject reported to wear a seat belt, and of these television ads, exposure to the "coconut" ad was the most prevalent.

The overall canonical correlation was not significant in any province for the pre-campaign data, but was significant at .05 in five of the provinces for the post-campaign data. The correlations did not, however, change significantly from pre-campaign to post-campaign in any province. The television package as a whole related highly to the "use" variable in five of the provinces, and "favourability" in four, while they shared approximately equal importance in Newfoundland. Except in New Brunswick, where the "egg" television commercial was the most important, the "coconut" commercial dominated in every one of those five provinces where significance was obtained. For the most part the signs of the coefficients were the same, so that those subjects who reported a higher frequency of seat belt use and/or being more favourable to seat belt legislation were more likely to report recognizing the "coconut" commercial than the other two commercials.

Discriminant Analysis

In the Ontario version of the questionnaire, there were several additional questions asked in an attempt to gain a more complete understanding of what type of person was more favourable to seat belt legislation. One of these was a dichotomous variable asking the subject if he

would vote For/Against a compulsory seat belt law given the opportunity. On the pre-campaign survey, 65.4% said they would vote for such a law; while 63.0% replied affirmatively on the post-campaign data. It was attempted to identify those characteristics of the respondents which delineated between these two responses.

A technique known as discriminant analysis, which is a statistical procedure used to distinguish between two or more types of responses, was employed. To discriminate between the groups, a set of variables which are thought to measure the characteristics upon which the groups diverge is compiled. Discriminant analysis attempts to form a linear combination of the discriminating variables in such a way as to maximize the separation between the groups. The overall degree of separation is reported by the canonical correlation statistic. Additionally, the coefficients can be interpreted in much the same manner as in multiple regression analysis. When the sign is ignored, each coefficient represents the relative contribution of its associated variable to the linear function. The sign denotes whether the variable is making a positive or negative contribution.

In this case, there were two groups, namely those who would vote For, and those who would vote Against a compulsory seat belt law. The discriminating variable list included age, sex, reported seat belt use, how often the subject drives or rides in a car, whether the family car has seat belts, whether there are children less than 16 years old in the household, and whether the subject voted in the last provincial election. In the second analysis, the nine attitude questions were added to the list of discriminating variables. The discriminant analysis was performed for the Ontario data, and the results are found in Table 20.

How often a subject reported wearing a seat belt was seen to be the most important variable in the first analysis, and indeed the only variable in the post-campaign data. The overall canonical correlation rose from 0.3910 on the pre-campaign data to 0.7870 for the post-campaign data.

In the second analysis, the overall canonical correlation increased from 0.5520 to 0.6150, indicating that there was a slightly stronger discrimination on the post-campaign data. Two variables appeared to dominate for the post-campaign data, namely, seat belt use out of the

FIRST ANALYSIS: DEMOGRAPHIC VARIABLES					
Wave	Variables in Equation	Coefficient	Wilk's Lambda	Classification	Canonical Correlation
Pre	Seat Belt Use	0.9935	0.8473***	67.4%	0.3910
	Drive/Ride	0.2901			
Post	Seat Belt Use	1.0000	0.3802***	74.3%	0.7870

SECOND ANALYSIS: DEMOGRAPHIC + ATTITUDE VARIABLES					
Pre	Seat Belt Use	-0.3815	0.6958***	75.7%	0.5520
	City	-0.2335			
	Control	-0.3922			
	Support/Fatigue	-0.3763			
Post	Seat Belt Use	-0.5037	0.6213***	79.7%	0.6150
	City	-0.4031			
	Thrown Clear	-0.2947			
	Support/Fatigue	-0.2759			
	Overconfident	-0.1804			

*** Indicates significance at .001

TABLE 20: Linear Discriminant Analysis for Demographic Variables, and Demographic plus Attitude Questions by Wave in Ontario

last ten trips, and the "city" attitude item. The post-campaign function was seen to correctly classify 79.7% of the cases.

It was expected that reported seat belt use would be an important discriminator between those who would vote for or against a compulsory seat belt law (Heron, 1976). In the first analysis this was the case. However, the respondent's attitude concerning wearing seat belts for city driving also dominated in the second analysis, and this was somewhat surprising given the success of the "thrown clear" attitude item in Ontario. The "thrown clear" and "support/fatigue" attitude items were also important discriminators, but the size of their coefficients indicated that they were of secondary importance.

Remarks

The purpose of this section of the evaluation was to determine what secondary effects the Seat Belt Education Campaign produced. From the first analysis it was seen that there was a significant trend towards increased seat belt use after the campaign, even though it could not be identified to any one particular province. In Ontario, the highly significant increase was more likely due to compulsory seat belt legislation. Favourability to compulsory seat belt legislation generally split between those provinces where it decreased, notably Newfoundland and Québec, and those where it increased.

The combination of the television commercials appeared to be equally spread between both seat belt use and favourability to a law. Those respondents with more positive secondary attitudes appeared to have recognized the "coconut" television commercial more often than any other television commercial. In this analysis, the "pumpkin" was not nearly as prevalent.

In the Ontario data, seat belt use was seen to be an important discriminator between those who would vote for or against compulsory seat belt legislation. As well, the "city" attitude item was also important as a discriminating variable, despite the fact that this was really a secondary target attitude.

LONG-TERM EFFECTS OF THE CAMPAIGN

The methodology for the evaluation of the Seat Belt Education Campaign called for two major surveys to be performed. The post-campaign survey studied the immediate short-term feedback to the campaign since these responses were gathered while the campaign was still fresh in the minds of the respondents. However, an evaluation of this campaign should additionally address itself to the long-term residual effects. That is, it is essential to determine whether any significant gains in the public's understanding of the rôle of seat belts have endured over a period of several months. Toward this end, a third survey was performed during the second and third weeks of September 1976, thereby representing an elapsed period of approximately five months from the conclusion of the campaign.

The third wave of the evaluation surveyed 800 respondents, including 200 subjects in each of St. John's, Saint John, Montréal, and Toronto. Montréal and Toronto were chosen primarily to monitor the reaction to compulsory seat belt legislation in Québec and Ontario. Both St. John's and Saint John were chosen on the basis of positive relationships derived previously between attitudes concerning seat belts and reported exposure to the campaign. For example, the overall canonical correlation between the campaign package as a whole and the key attitude questions (see Table 14) reached significance at .05 in both Newfoundland and New Brunswick on the post-campaign data. Similarly from Table 15, it was seen that a significant amount of the variation in the "thrown clear" attitude was related to both the "pumpkin" television commercial and the "run over" radio commercial. Finally, the television commercials in themselves were correlated at 0.2630 with the key attitude questions in Newfoundland (as well as being significant in Ontario) after the campaign. Thus, since these analyses revealed a high degree of association immediately after the campaign in both Newfoundland and New Brunswick, it was decided to determine whether this association would remain as strong several months later. This third wave was also stratified according to age and sex within each city, and the distribution of these demographic variables is shown in Table 21.

		MALE						FEMALE						TOTALS
		18 - 24	25 - 34	35 - 49	50 - 64	65+	SUB-TOTAL	18 - 24	25 - 34	35 - 49	50 - 64	65+	SUB-TOTAL	
ST. JOHN'S	Pre	23	37	32	24	7	123	15	30	19	14	5	83	206
	Post	23	29	30	26	9	117	14	21	19	20	6	80	197
	Third	25	39	18	12	6	100	17	30	27	21	5	100	200
SAINT JOHN	Pre	18	18	25	17	9	87	11	25	22	28	13	99	186
	Post	13	18	12	8	3	54	15	47	32	38	14	146	200
	Third	14	32	25	18	11	100	11	24	24	21	20	100	200
MONTREAL	Pre	11	24	30	25	12	102	8	28	39	21	3	99	201
	Post	13	27	33	15	14	102	10	40	29	27	11	117	219
	Third	7	31	25	24	13	100	11	38	21	22	8	100	200
TORONTO	Pre	31	20	29	13	5	98	17	30	26	17	12	102	200
	Post	26	32	22	13	7	100	20	18	27	21	14	100	200
	Third	23	35	24	11	4	97	20	34	35	11	3	103	200

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TABLE 21: Age and Sex Distributions of Respondents by Wave by City

The analyses in this section traced changes which had occurred in each of the four cities over the three waves. It was desired to use this data to determine whether the commercials could be remembered several months after the campaign had ended; whether there was any significant change in attitudes concerning seat belts; and how they were related to reported exposure to the television commercials. In each case, the figures derived in the third wave were compared to those found in the first and second waves, and it was generally expected that a public education campaign of this type would precipitate large increases (in reported recognition of a television commercial, for example) from pre-campaign to post-campaign, and a slight decline from the post-campaign data to the third wave. It was also desired to see whether there was any significant difference between the figures derived from the third wave and those baselines established by the pre-campaign data.

If there was a long-term effect from the campaign, it was expected that the proportion of respondents who answered positively to the television and radio recognition questions would be significantly different over the three waves. A multiple chi square analysis was performed with three dimensions, namely Recognition of a particular commercial (Yes/No); City (St. John's/Saint John/Montréal/Toronto); and Wave (Pre/Post/Third). For example, the analysis of the television commercials (Table 22) revealed a significant interaction for each of the commercials with the exception of the "coconut" ad, and the "marble" (bogus) recognition question. In both cases, there were significant differences in reported recognition over the three waves. No more than 7.5% of the sample (see Appendix E) reported to have recognized the "marble" television commercial, however.

As found in the previous multiple chi square analysis for the television commercials, despite the significant three-factor interaction, the chi square value for the Recognition x Wave sub-table was responsible for a large amount of the total chi square. Hence these analyses indicated that the proportion of respondents who reported to have recognized the legitimate television commercials was significantly different over the three waves. Figure 10 depicts the percentages of respondents who reported to have recog-

	TOTAL	RECOGNITION BY CITY	RECOGNITION BY WAVE	RECOGNITION BY CITY BY WAVE
	(11 d.f.)	(3 d.f.)	(2 d.f.)	(6 d.f.)
EGG	809.1***	12.5**	770.6***	26.0***
PUMPKIN	762.6***	20.2***	709.0***	33.4***
COCONUT	548.0***	9.1*	527.1***	11.8
MARBLE(a)	26.5**	11.2**	9.6**	5.7
OVERALL	1,039.5***	15.4***	984.1***	40.0***

(a) Indicates "Bogus" Recognition Question

* Indicates significance at .05
** Indicates significance at .01
*** Indicates significance at .001

TABLE 22: Chi Square Values from Multiple Chi Square Analysis of the Number of Respondents Recognizing the Television Commercials

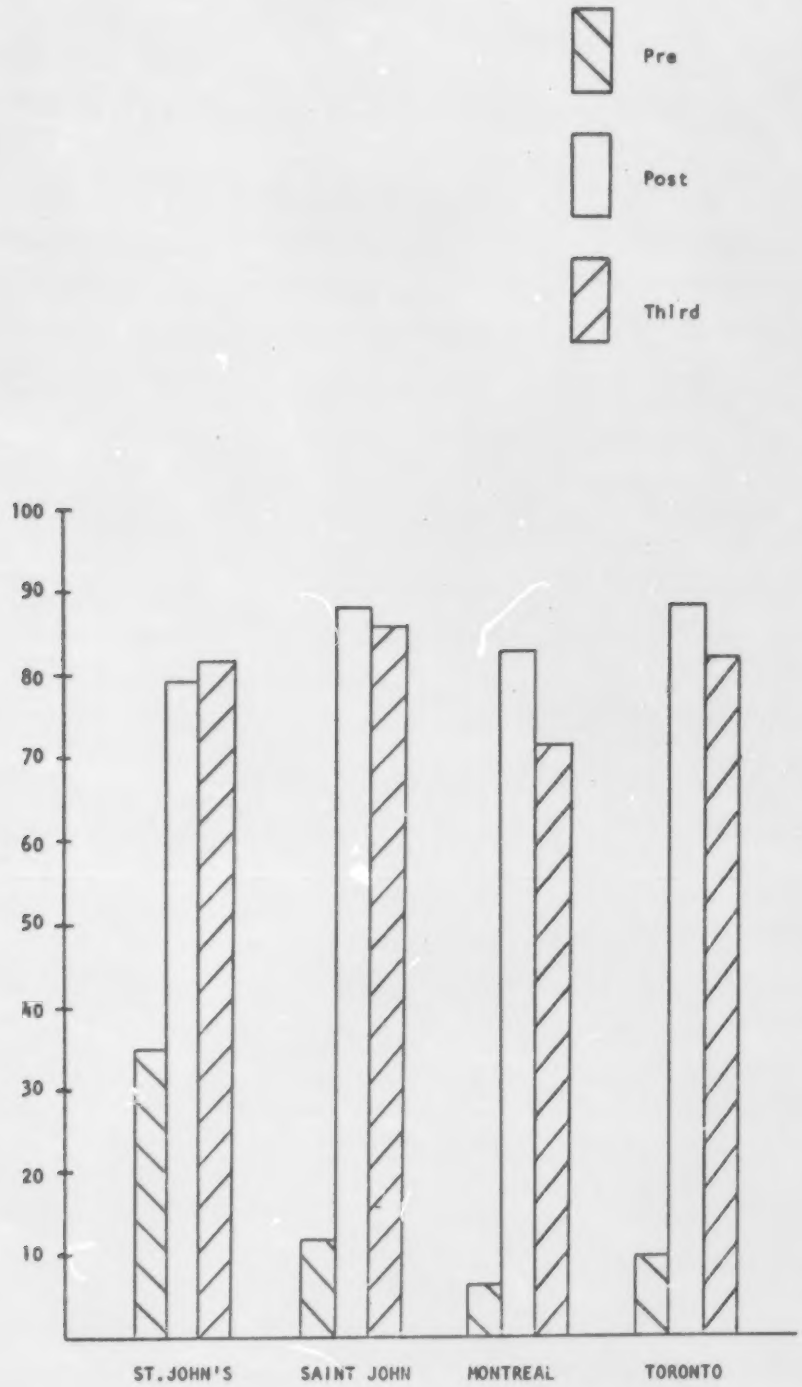


FIGURE 10: Percentages of Respondents Recognizing At Least 1 Television Commercial by Wave by City

nized at least one of the television commercials, and it was seen that there was a dramatic increase from pre-campaign to post-campaign, and a slight decline from the post-campaign survey to the third wave. As expected, some "spill-over" effect from the Campaign Development phase was apparent in the pre-campaign data. In St. John's, 35.0% of the respondents reported to have recognized at least one television commercial, whereas in Saint John, the percentage was only 12.9%.

The multiple chi square procedure was similarly applied to each of the radio commercials (Table 23), and in this case only the two Atlantic cities were included in the analysis, since the radio commercials were not available in either Québec or Ontario. There was no significant interaction effect for the "collide" radio commercial, and the "teach" (bogus) recognition question. The "collide" advertisement revealed significant differences not only over the three waves, but across the four cities as well. For the bogus question, no significant differences were found in either the Recognition x City or Recognition x Wave sub-tables.

As with the previous analysis, a large proportion of the total chi square was taken into account by the Recognition x Wave sub-table. Hence, there were highly significant differences in reported recognition of the legitimate radio commercials over the three waves in the Atlantic cities. The percentages of respondents recognizing at least one of the radio commercials (Figure 11) increased from pre-campaign to post-campaign, and then changed slightly for the third wave data. Finally, it was also seen that the percentages in Toronto, where the commercials were not presented, were smaller than the figures derived for the other two cities in each of the three waves. The percentages of respondents who reported to have recognized the television and radio commercials are tabulated in Appendix E.

These analyses implied that the television and radio commercials made a sufficient impression that respondents could recognize them several months after they were presented. For the most part, there were no significant differences for the bogus recognition questions, and thus, the evidence became that much more reliable.

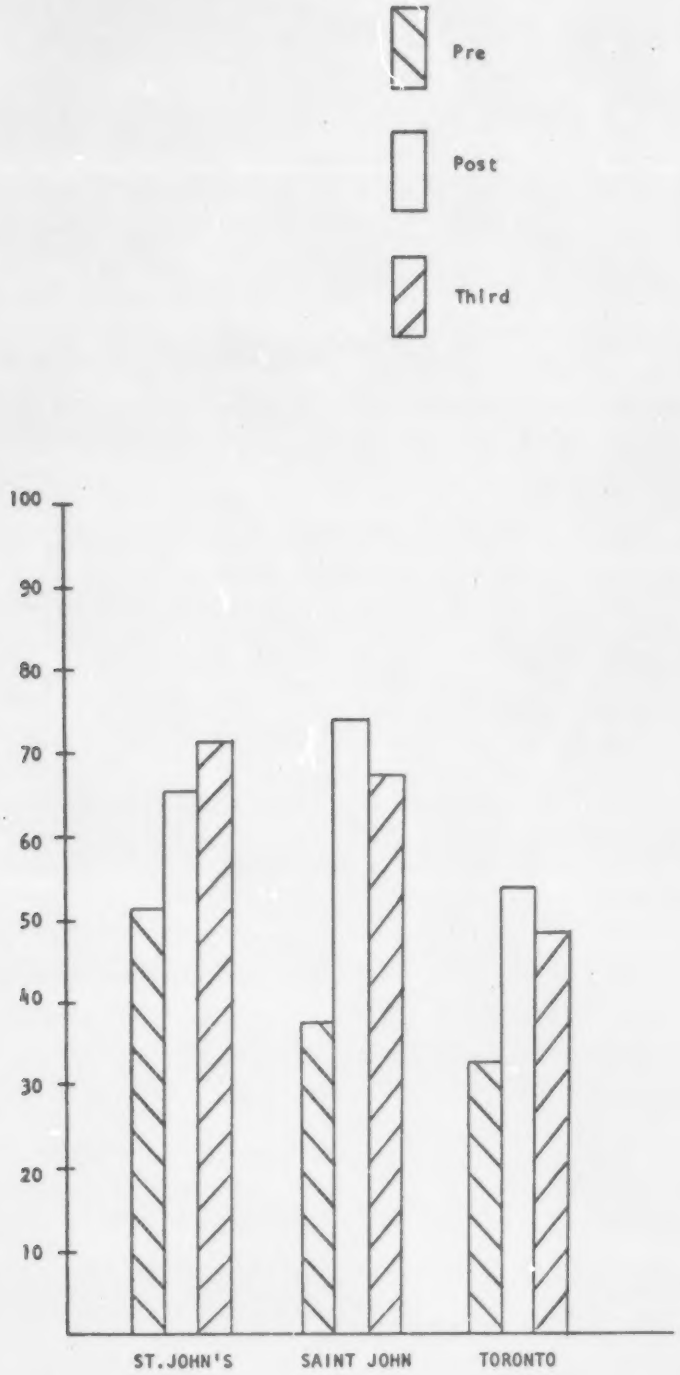


FIGURE 11: Percentages of Respondents Recognizing At Least 1 Radio Commercial by Wave by City

	TOTAL	RECOGNITION BY CITY	RECOGNITION BY WAVE	RECOGNITION BY CITY BY WAVE
	(5 d.f.)	(1 d.f.)	(2 d.f.)	(2 d.f.)
SEVEN-TENTHS	46.4***	1.7	33.5***	11.2***
RUN OVER	115.7***	0.01	102.7***	13.0***
COLLIDE	27.5***	4.3*	20.3***	2.9
TEACH(a)	6.2	0.58	1.3	4.3
OVERALL	78.1***	0.65	66.5***	11.0**

(a) Indicates "Bogus" Recognition Question

* Indicates significance at .05
** Indicates significance at .01
*** Indicates significance at .001

TABLE 23: Chi Square Values from Multiple Chi Square Analysis of the Number of Respondents Recognizing the Radio Commercials

It was also desired to see if there were any long-term benefits to having been exposed to the campaign. If there was a long-term effect from the campaign, it was expected that respondents would relate significantly more positive attitudes concerning seat belts after the campaign than in the pre-campaign data. This hypothesis was tested using analysis of variance, and the results are reported in Table 24.

Considering the three key attitude questions first, none of the interaction F-values were found to be significant, and this allowed a direct examination of the main effects. For the "bracing" attitude question, there were no significant differences over the three waves, but there were significant differences across the four cities. The "tossed" and "thrown clear" attitude questions did reveal significant differences over the three waves, and the mean values to these questions are plotted in Figures 12 and 13. Generally speaking, these means showed increases (particularly for the "thrown clear" attitude question) from pre-campaign to post-campaign, and then either increased or decreased slightly.

The analysis of reported seat belt use out of the last ten trips was confused by the availability of seat belt legislation in the various regions. Compulsory seat belt legislation came into effect in Ontario in January 1976, or between the pre-campaign and post-campaign surveys; and came into effect in Québec in August 1976, or between the post-campaign wave and the third wave; no legislation has been introduced in either Newfoundland or New Brunswick. Given this background, it was expected that there would be a highly significant City x Wave interaction for this question, and the F-value of 33.171 was significant at .001.

Considering only the pair of Atlantic cities, there were no significant differences in reported seat belt use over the three waves. The only difference found to be significant was between St. John's and Saint John. In the analysis of the Montréal-Toronto combination, however, the interaction was again found to be significant, due to the difference in the date of implementation of compulsory legislation. In Toronto, the mean number of times out of the last ten trips (see Appendix E) that the respondent reported to have worn a seat belt rose from 3.84 in December 1975, to 8.07 in September 1976; in Montréal, the value rose from 3.08 to 7.56 during the same period.

ATTITUDE	MAIN EFFECTS		INTERACTION
	CITY	WAVE	CITY x WAVE
BRACING	7.465***	1.184	1.527
TOSSED	11.713***	3.300*	0.579
THROWN CLEAR	2.962*	6.840***	1.284
SEAT BELT USE	189.297***	85.536***	33.171***
St.John's + Saint John	7.573**	2.445	0.190
Montréal + Toronto	94.955***	127.655***	45.110***
SEAT BELT FAVOURABILITY	8.093***	0.406	4.031***

* Indicates significance at .05
** Indicates significance at .01
*** Indicates significance at .001

TABLE 24: F-values for Main Effects and Interaction from Analysis of Variance of the Key Attitude Questions and Ancillary Variables

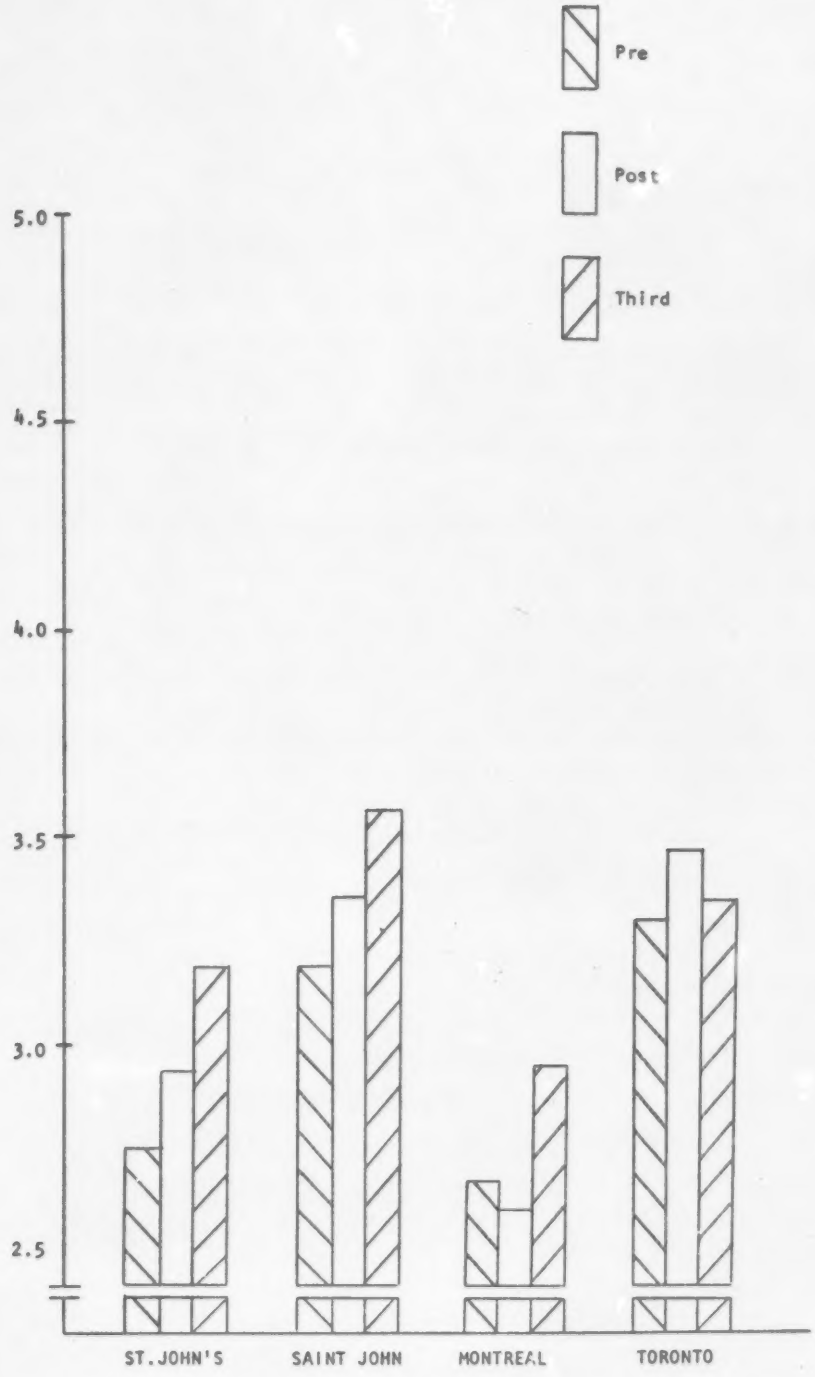


FIGURE 12: Mean Values to "Tossed" Attitude Question by Wave by City

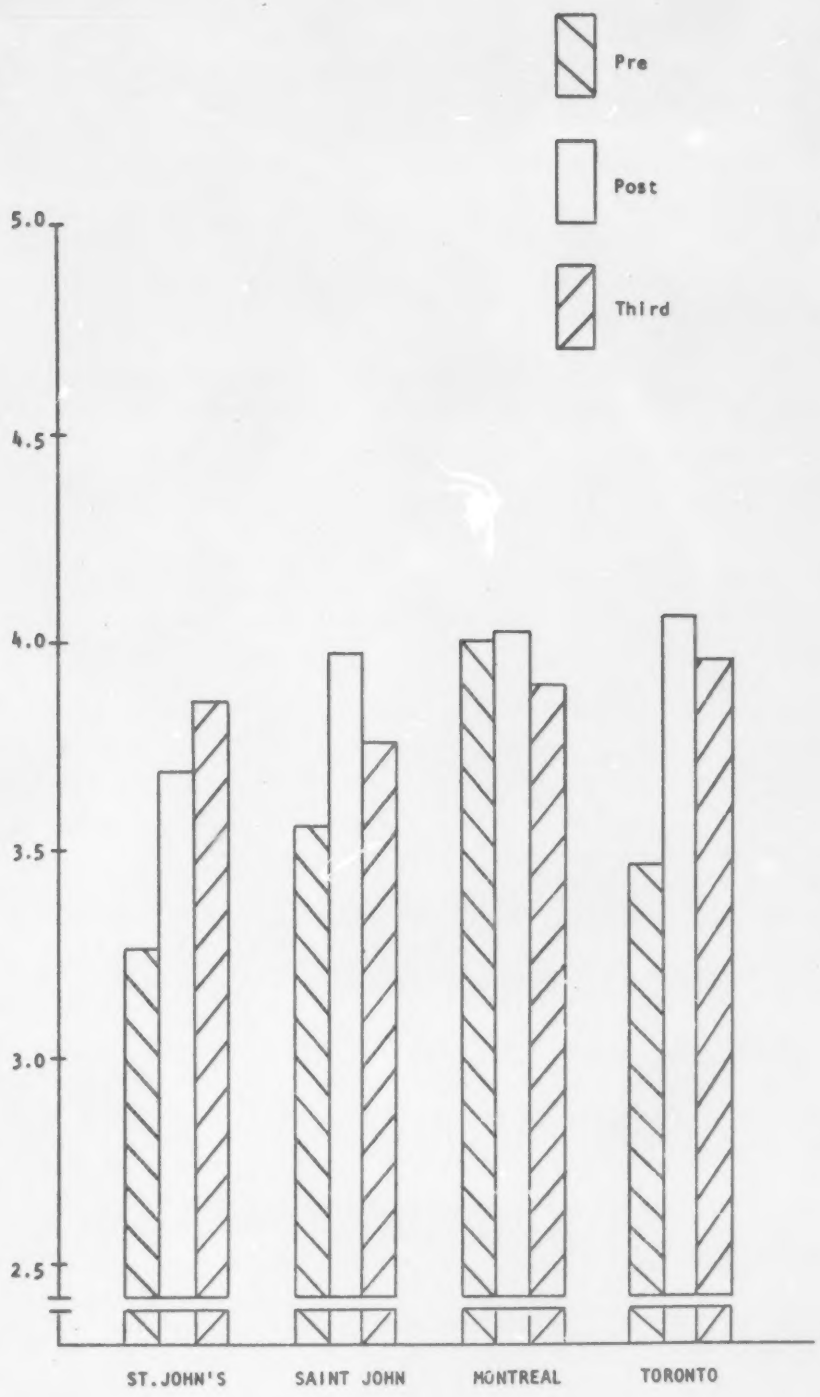


FIGURE 13: Mean Values to "Thrown Clear" Attitude Question by Wave by City

The analysis of favourability to a compulsory seat belt law revealed an interaction significant at .001, and this interaction is plotted in Figure 14. For example, in Toronto the mean rose from 3.72 to 4.12 to 4.34 over the course of the three waves. However, it was not clear that this was due entirely to the Seat Belt Education Campaign, or if it could be interpreted as a vote of confidence in a law which the public perceived to be having a beneficial effect. In Montréal conversely, favourability declined sharply from pre-campaign to post-campaign, and again slightly for the September survey. The changes in the Saint John data followed a pattern that was generally expected; however, a one-way analysis of variance (see Appendix E) revealed that there was no difference in the mean values over the three waves. Finally, the values in St.John's were the opposite of those derived in Saint John.

In summary, there were no significant differences in the means of the "bracing" attitude question over the three waves. There was nevertheless a general trend to more positive attitudes on the "tossed" and "thrown clear" attitude questions. In those jurisdictions where compulsory seat belt legislation existed, significant increases in reported seat belt use were observed. It appeared unlikely however that these increases were due to the campaign since there were no significant differences over the three waves in the pair of Atlantic cities where legislation did not exist. Finally, favourability to compulsory seat belt legislation remained unchanged over all three waves in Saint John, but did either increase or decrease significantly elsewhere.

In the final analysis, it was sought to determine whether positive attitudes concerning seat belts were related to reported exposure to the television commercials. Canonical correlation analysis was performed, and it was hypothesized that if there was a long-term effect from the campaign, then the overall canonical correlation would reach significance for both the post-campaign data and the third wave data, but not for the pre-campaign data. The coefficients indicated the relative weight of the individual variables, and from a previous analysis, it was found that the "pumpkin" or "egg" commercials from the television variables, and the "thrown clear" key attitude item from that set of variables dominated their respective

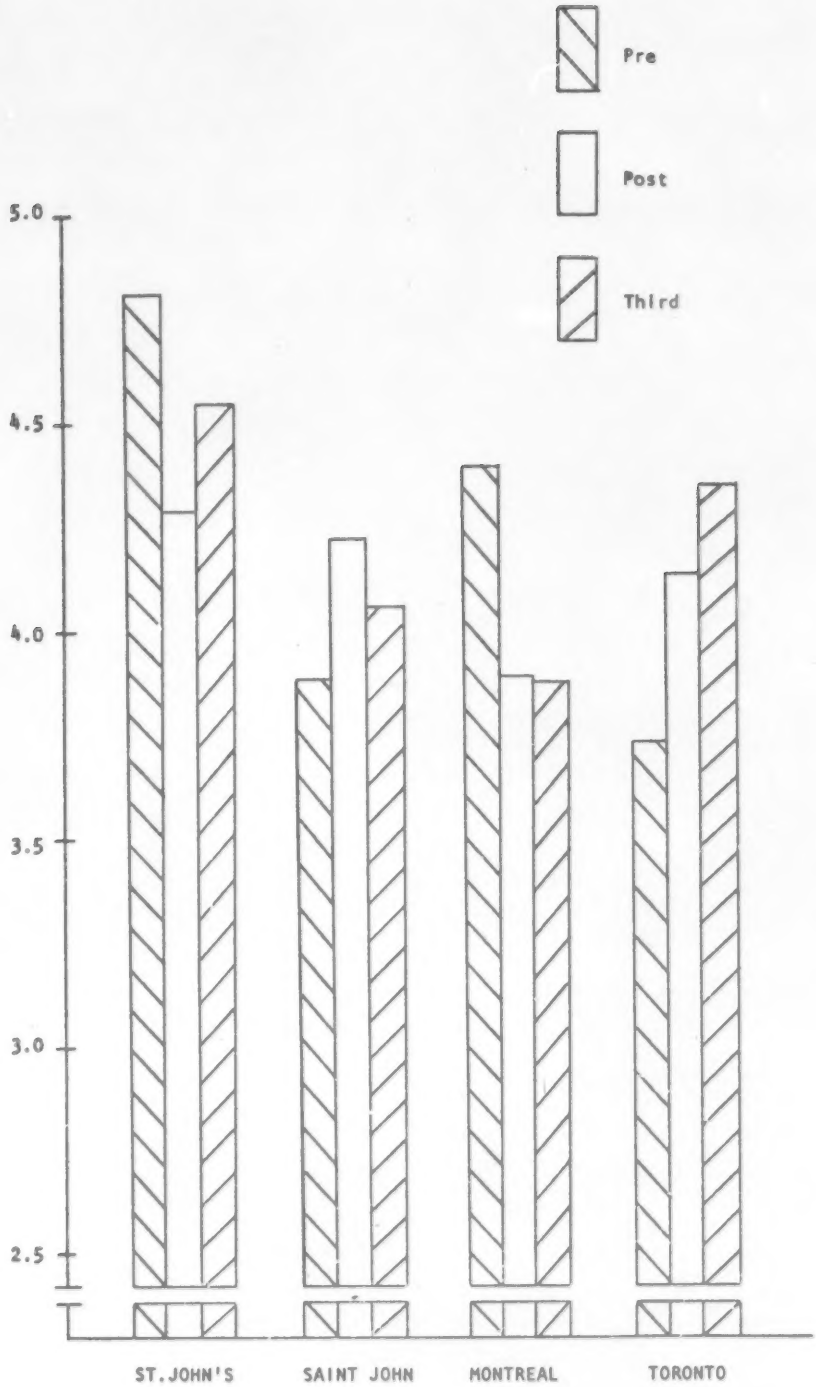


FIGURE 14: Mean Values to Favourability Attitude Question by Wave by City

linear combinations. Thus, if this pattern also emerged for the third wave data, there would have been some indication of a long-term effect from the campaign. These analyses were performed and are reported in Table 25.

Considering for example the results in St.John's, the overall canonical correlation increased from a pre-campaign value of 0.1475 to 0.2996 on the post-campaign data, and increased again to 0.3054 on the third wave data. Both these last two values were significant at .05, thereby indicating that there was a significant relationship between positive attitudes concerning seat belts and reported exposure to the television commercials both immediately after the conclusion of the campaign and several months later. No significant relationships were found in either of these two waves for any of the other cities. In fact, the overall canonical correlation decreased from pre-campaign to post-campaign in Saint John and Montréal, and then increased for the third wave. In Toronto, the value rose from 0.1993 to 0.2760, and declined slightly to 0.2627 on the third wave. Both the latter two values just failed to reach significance at .05.

The coefficients computed for the "thrown clear" attitude item and the "pumpkin" television commercial dominated their respective linear combinations in every city for the post-campaign data. In the analysis of the third wave data, this was found to be the case only in Toronto. In Montréal, the dominating variables were the "bracing" attitude question, and the "coconut" television commercial. In the Atlantic cities, the "tossed" attitude question dominated that linear combination; however, the "egg" commercial, which was the corresponding television commercial, did not dominate that linear combination there.

The results of this analysis indicated that there was some evidence of a long-term effect from the campaign. The canonical correlation derived from the post-campaign data and the third wave data was significant in St.John's. None of the other values were found to be significant in any of the other cities. While the "thrown clear" - "pumpkin" combination dominated in the post-campaign analysis in every city, this was not found to be true for the third wave. Hence the evidence concerning a long-term relationship between positive attitudes concerning seat belts and reported exposure to the television commercials was strong in St.John's, but very weak in the other centers.

		ATTITUDE			TELEVISION			CANONICAL CORRELATION
		Bracing	Tossed	Thrown	Egg	Pumpkin	Coconut	
ST. JOHN'S	Pre	-0.2340	0.4988	-0.9371	-0.9539	-0.2752	0.3122	0.1475
	Post	-0.0730	-0.1207	-0.9644†	-0.3435	-0.7545	-0.0896	0.2996*
	Third	0.3360	0.8535	0.3148	-0.4089	0.4588	0.8084	0.3054*
SAINT JOHN	Pre	0.1398	0.9469	0.1412	1.1019	-0.2720	0.0032	0.2165
	Post	0.0073	-0.2324	1.0521	0.0283	0.7048	0.4422	0.1489
	Third	-0.2179	-0.6760	-0.5491	0.1030	-0.8388	-0.3501	0.2233
MONTREAL	Pre	0.3100	0.8053	-0.6925	-0.0376	-0.9293	-0.1995	0.1950
	Post	0.2553	0.2629	-0.9232	0.2342	-0.9350	-0.2558	0.1260
	Third	0.9067	0.0169	0.3609	-0.2612	-0.4164	1.1638	0.1810
TORONTO	Pre	-0.0559	-0.0727	-1.0254	-0.5601	0.8850	0.4776	0.1993
	Post	-0.0309	-0.2047	-0.9388	-0.1517	-0.8472	-0.1900	0.2760
	Third	-0.5276	-0.2819	-0.7328	0.0843	-1.0112	-0.0262	0.2627

* Indicates significance at .05

† Underlined figure(s) are those coefficient(s) which dominated the respective linear combinations

TABLE 25: Coefficients and Canonical Correlation Values from Canonical Correlation Analysis of Attitude Questions and Television Commercials by Wave by City

Remarks

The purpose of these analyses was to investigate the possibility of a long-term residual effect from the Seat Belt Education Campaign. A third wave of the evaluation was performed in September 1976, or approximately five months after the conclusion of the campaign. The survey consisted of 800 respondents, with 200 subjects in each of St.John's, Saint John, Montréal, and Toronto. Montréal and Toronto were chosen primarily to monitor reaction to compulsory seat belt legislation in Québec and Ontario, while St.John's and Saint John were chosen on the basis of positive relationships established previously between attitudes concerning seat belts and reported exposure to the various elements of the media package.

The first analysis clearly demonstrated that the campaign made an impact sufficiently strong upon the memories of the respondents that they could recognize the television and radio commercials several months after they were presented. This was particularly true of the television commercials.

There was no significant difference in the means of the "bracing" attitude question over the three waves; however, there were significant differences in both the "tossed" and the "thrown clear" attitude questions over the three waves. Generally speaking, the means increased from pre-campaign to post-campaign, and then changed slightly for the third wave. In those jurisdictions where there was no compulsory seat belt legislation, reported seat belt use did not change significantly over the three waves. Favourability to compulsory seat belt legislation was unchanged in Saint John over the three waves, and either increased or decreased in the other three centers.

The canonical correlation analysis revealed that there was a significant relationship between positive attitudes concerning seat belts and reported exposure to the campaign in St.John's both immediately after the campaign and several months later. This suggested that there was a significant long-term effect in St.John's, but since none of the other canonical correlations reached significance at .05, there was no evidence of a significant relationship elsewhere.

SUMMARY AND CONCLUSIONS

The Seat Belt Education Campaign was presented for a thirteen-week period at the beginning of 1976. The expressed purpose of the campaign was to dispel certain negative myths concerning seat belts and to promote a better understanding of their functions in a car crash. The campaign included advertising in three media, namely television radio and newspaper, with Transport Canada sponsoring the television component, and the individual provinces having the option of sponsoring the radio and newspaper components.

Two major independent surveys, each comprising approximately 4,000 subjects, were performed. The first was conducted immediately before the campaign, and the second immediately succeeding the campaign. This type of strategy was therefore designed to evaluate changes in the public's attitudes as they related directly to the campaign. In addition, a minor survey comprising 800 respondents was conducted several months after the end of the campaign. Because responsibility for the use of seat belts lies with the provincial authorities, the evaluation attempted to make statements on a provincial level, rather than providing nationally-representative data.

The analyses indicated that the campaign did reach the public through the media. While the respondents could not spontaneously recall advertising they had heard on radio or read in the newspaper, they were nevertheless capable of recalling commercials viewed on television. Moreover, the recognition questions confirmed that the advertising campaign, particularly the radio and television components, had received broad exposure. All of the television commercials experienced significantly more positive responses in each of the provinces; whereas the same was true of the radio commercials with only one exception. The newspaper commercials however lagged well behind with the possible exception in P.E.I., and there was some evidence to indicate that the omnibus advertisements were more easily recognized than the fragmented advertisements.

There did not appear to have been a wholesale shift in the public's attitudes concerning seat belts. The "thrown clear" attitude item was consistently more positive after the campaign, but aside from this particular question, there appeared to be only sporadic positive shifts in the means. These were counterbalanced to some degree, however, by the negative movements in the means, particularly in Québec and Ontario.

One of the major purposes of the evaluation of the campaign was to determine the relationship between attitudes concerning seat belts and reported exposure to the various elements of the campaign. It was hoped to define mutually exclusive variables which could have indicated which particular set of commercials were most highly related to positive attitudes concerning seat belts. However, because of the relative success of the television component, and the correspondingly relative failure of the newspaper to reach the public, these analyses produced highly unreliable statistics. Consequently, the strategy of partitioning the universe into mutually exclusive regions was abandoned, and a slightly less powerful set of analyses was devised. These analyses differed only to the extent that the investigation could not be resolved to the level of a particular combination of commercials; however, differences between the different media, or the different commercials within any one medium could still be made with a high degree of competence.

Television was the medium which made the biggest impact upon the key attitude items. The newspaper component made some impact, but unfortunately, this influence was essentially negative with respect to the other media. The advertising package as a whole related most highly with the "thrown clear" attitude, and this was true in every province with the exception of P.E.I., where the "tossed" attitude was slightly more important.

For each television commercial, there was a corresponding radio commercial. The contributions of each element of the pair of commercials to the target attitude item for which they were designed was also examined. Overall, the contribution of the "coconut" television commercial and the "7/10" radio ad failed to be significantly related to its key attitude question in any province. On the other hand, the "pumpkin" - "run over" combination did relate significantly to its attitude item in five of the seven provinces. Not only was the "pumpkin" commercial significant, but the "run over" radio commercial was also an important contributor to the relationship. The "egg" - "collide" combination was only significant in P.E.I. and Saskatchewan.

Considering the television commercials in isolation from the rest of the campaign, the "pumpkin" commercial showed the greatest degree of association with the attitude items, followed closely by the "egg" commercial; the "coconut" commercial fell well behind. The television commercials

as a whole were highly related to the "thrown clear" attitude throughout the provinces; however, in P.E.I., the "tossed" attitude was the most important attitude.

There was a significant trend toward increased seat belt use after the campaign across the provinces, although it could not be identified to any one particular province. There was a highly significant increase in Ontario, but it seemed likely that this was due to compulsory seat belt legislation. Favourability to a hypothetical compulsory seat belt law remained virtually unchanged from pre-campaign to post-campaign. In the Ontario data, the number of times that a respondent reported to have worn a seat belt was seen to be an important discriminator between those who were for or against compulsory seat belt legislation. As well, the "city driving" attitude item was also important as a discriminating function. Reported exposure to the television commercials exhibited a significantly positive relationship with these two variables in five of the ten provinces. In this analysis, those respondents with more positive ancillary attitudes appeared to have been more likely to recognize the "coconut" commercial; and the "pumpkin" commercial was not as effective in this instance.

The third wave of the evaluation was performed approximately five months after the conclusion of the campaign. It included respondents in four major cities, and the purpose of this wave was to investigate the long-term residual effects of the campaign. The analyses clearly demonstrated that the campaign made an impact sufficiently strong upon the memories of the respondents that they could recognize the commercials, particularly the television commercials, several months after they were presented. There was no significant difference in the "bracing" attitude question over the three waves. There were nevertheless significant differences in both the "tossed" and the "thrown clear" attitude questions. In those jurisdictions where there was no compulsory seat belt legislation, reported seat belt use did not change over the three waves. Favourability to compulsory seat belt legislation increased in some areas, but decreased in other areas, notably Montréal, over the three waves of the survey. For the most part, there was no evidence to suggest a significant relationship between positive attitudes concerning seat belts and reported exposure to the television commercials - the only exception was in St. John's, Newfoundland.

The results of the various analyses seemed to indicate that the Seat Belt Education Campaign was certainly not an unqualified success. The fact that there was very little positive change in the public's attitudes concerning seat belts was rather disappointing. There was some indication of increased seat belt use after the campaign, but favourability to compulsory seat belt legislation was virtually unchanged as well.

Moreover, the analyses of the third wave suggested that there was virtually no long-term benefit to having been exposed to the campaign. The television and radio commercials were unique enough that the public was able to recognize them several months after the fact, but there was only weak evidence that positive attitudes concerning seat belts were dependent upon the exposure.

Yet it is well documented that public education campaigns of this nature are very limited in their capabilities to influence attitudes, much less to modify behaviour. In any case, their effects seem to be necessarily short-lived, and in this context, the results are not nearly so discouraging.

For example, the evaluation of the development phase had found that while there was very little significant change in both the public's attitudes concerning seat belts and favourability to compulsory seat belt legislation, they were nevertheless highly correlated with exposure to the campaign. This was generally found to be the case in this evaluation; and, unlike the development phase, one of the key attitude items, namely "thrown clear" was consistently more positive after the campaign in every province. This was the target attitude for the "pumpkin" television commercial and the "run over" radio commercial, and throughout the analysis, it became apparent that this attitude was highly related to exposure to both these commercials. Exposure to the "egg" television commercials and the "collide" radio commercial also indicated a high correlation with its target attitude item.

The "coconut" television ad, either alone or in combination with the "7/10" radio ad, however, lagged well behind the other two television commercials in relation to positive attitudes. Those respondents with more positive secondary attitudes of seat belt use and favourability to seat belt legislation appeared to be more likely to recognize this commercial.

The development phase also revealed that the newspaper component was the least cost-effective of the three media, and this was confirmed by the analysis for this evaluation. In fact, it was found to be providing

an essentially negative contribution with respect to the other media. But while the development phase had found that the interaction of the media provided a significant amount of the effect of the campaign, this was not found to be the case in this evaluation, at least insofar as the newspaper component was concerned. A case could have been made for the interaction of the radio and television components, especially the "pumpkin" television ad and the "run over" radio commercial. Hence, serious consideration should be given whether to include the newspaper component in future campaigns using this "package".

Finally, the television commercials were sponsored by Transport Canada, and the individual provinces had the option of specifying how they would augment this exposure. For example, Nova Scotia, New Brunswick, and British Columbia bought television time in addition to that bought by Transport Canada. Moreover, Newfoundland, Nova Scotia, and Saskatchewan relied more heavily on the quarter-page newspaper ads, which they were able to have printed much more often, than the omnibus full-page advertising.

These analyses suggested that television, because of its unique ability to dramatize the benefits of habitual seat belt use, and to expose popular misconceptions surrounding them, played the most important rôle in relation to the public's attitudes concerning seat belts. The results in Québec, Ontario, and Alberta were not essentially different from those derived in the other provinces. Both the radio and newspaper advertising appeared to have been providing reinforcement to the messages portrayed in the television ads. For the most part, there were no differences in those provinces where the fragmented ads were printed versus those where the omnibus ads were available.

The radio commercials, on the other hand, were expected to provide a much stronger level of reinforcement than the newspaper commercials. Both New Brunswick and British Columbia made extensive use of radio air time, and there was some indication, particularly from the canonical correlations, of a signficant relationship between positive attitudes and exposure. Unfortunately, exposure to the television commercials rather overshadowed the effects of exposure to the other media.

BIBLIOGRAPHY

Bragg, B.W.E., "Seat Belts: 'A good idea but they are too much bother' An Analysis of the Relationship between Attitudes toward Seat Belts and Reported Seat Belt Use", Road and Motor Vehicle Traffic Safety Branch, Department of Transport, Report No. TP156, December, 1973.

Dalmotas, D.J., Welbourne, E.R., "Preliminary estimates of traffic fatality reduction in Canada through provincial seat belt usage laws", (Unpublished Technical Memorandum), Road and Motor Vehicle Traffic Safety Branch, Transport Canada, 1975.

Ferguson, George A., Statistical Analysis in Psychology and Education, McGraw Hill, 1959.

Henderson, M., Freedman, K., "The effect of mandatory seat belt use in New South Wales, Australia", New South Wales: Traffic Accident Research Unit, Department of Motor Transport, 1974.

Heron, Ruth M., "Attitudes of Canadian Towards Legislation Requiring Mandatory Use of Seat Belts", Road and Motor Vehicle Traffic Safety Branch, Department of Transport, Report No. TP546, September 1976.

Nie, Norman H., Hull, C. Hadlai, Jenkins, Jean G., Steinbrenner, Karin, Bent, Dale H., Statistical Package for the Social Sciences; Second Edition; McGraw Hill, 1975.

_____ "Developing and Testing a Public Education Program on Seat Belts", Peat, Marwick and Partners, (Unpublished Report), Road and Motor Vehicle Traffic Safety Branch, Transport Canada, 1975

Stevenson, H.M., Peskun. P., Mitson, L., Tibert, J., "Seat Belt Utilization by Canadian Automobile Drivers: Estimates from a National Survey"; Institute for Behavioural Research, York University; (Unpublished Report); Road and Motor Vehicle Traffic Safety Branch, Transport Canada, 1976.

_____ "The Seat Belt Argument", Transport Canada Report CTS-4-74 Transport Canada, 1974.

Winer, B.J., Statistical Principles in Experimental Design, McGraw Hil, 1962.

APPENDIX A: Scripts of Radio and Television Commercials, and Copies of Newspaper Ads

"Egg" Television Commercial

VIDEO	AUDIO
	ANNCR. V.O.
OPEN ON MCU MAN IN FRONT OF TABLE. WE SEE HIM FROM THE NECK DOWN TO WHERE THE TABLE CUTS OFF. HE IS HOLDING A METAL BOX WITH A HINGED LID, AND AN EGG IS RESTING ON THE TABLE.	When you're travelling along the road in your car at 30 miles per hour and you crash,
HE TAKES THE EGG, PUTS IT IN THE BOX, CLOSES THE LID, AND DROPS THE BOX ON THE TABLE. HE PICKS UP THE BOX, TIPS IT, AND LETS THE BROKEN EGG RUN OUT.	SFX: CRASH AS BOX HITS THE TABLE. you crash around too, and you get hurt by the steering wheel or the windshield.
HE TAKES ANOTHER BOX, AND ANOTHER EGG, AND SECURES THE EGG INSIDE THE BOX WITH A PIECE OF TAPE. HE CLOSES THE LID, AND DROPS THE BOX ON THE TABLE. HE OPENS THE BOX TO REVEAL THE UNBROKEN EGG INSIDE.	But if you wear seat belts, they restrain your movement inside the car, SFX: CRASH AS BOX HITS THE TABLE. and reduce your chances of serious injury by 70 per cent.
SUPER: IF YOU'RE NOT WEARING A SEAT BELT, WHAT'S HOLDING YOU BACK?	Think about it. If you're not wearing a seat belt, what's holding you back?
TRANSPORT CANADA LOGO.	

"Pumpkin" Television Commercial

VIDEO	AUDIO
OPEN ON CU OF A PUMPKIN FLYING THROUGH THE AIR IN SLO-MO.	SFX: MUSIC TO CAPTURE FLOATING SENSATION OF THE PUMPKIN
	ANNCR. V.O. Some people believe it's better to get thrown clear in a car crash. But at 30 miles per hour, that's the speed you'll be doing when you hit the concrete....
IN REAL-TIME, CRASH EFFECT AS PUMPKIN IMPACTS ON THE ROAD.	SFX: SOUND OF PUMPKIN HITTING THE ROAD
A PUMPKIN HITS A LIGHT STANDARD.	or a lighting pole....
TRUCK RUNS OVER A PUMPKIN.	or maybe you're just lying there stunned in the road.
	No, the best place to be in a car crash is in the car with your seat belts buckled to hold you there.
SUPER: IF YOU'RE NOT WEARING A SEAT BELT, WHAT'S HOLDING YOU BACK?	Think about it. If you're not wearing a seat belt, what's holding you back?
TRANSPORT CANADA LOGO.	

"Coconut" Television Commercial

VIDEO	AUDIO
OPEN WITH CU OF EMPTY SCENE WITH HARD METALLIC SURFACE PRESENT AT FLOOR LEVEL.	ANNCR. V.O. People who don't wear seat belts for city driving don't understand they can't brace themselves against the force of a low speed accident.
HAND APPEARS AND PLACES A COCONUT CENTER SCREEN RESTING ON METAL SURFACE (TUFTS UP).	So for you a demonstration. If you crash at 30 miles per hour, the force with which you and your coconut hit the dash is several thousand pounds.
HEAVY METAL WEIGHT CRASHES DOWN TO SMASH THE COCONUT, AND REMAINS IN CAMERA STILL CU.	Something like that, and it all happens in about seven-tenths of a second.
WEIGHT IS RAISED, AND GOES OFF SCREEN TOP.	
HAND BRUSHES AWAY REMAINS OF THE COCONUT, AND PLACES ANOTHER COCONUT CENTER SCREEN	Want to see it again? Brace yourself....
FADE TO BLACK WITH SUPER: IF YOU'RE NOT WEARING A SEAT BELT, WHAT'S HOLDING YOU BACK?	Think about it. If you're not wearing a seat belt, what's holding you back?
TRANSPORT CANADA LOGO.	

"7/10" Radio Commercial

ANNCR: People who don't wear seat belts for city driving don't understand the consequences of low speed accidents. So for you, this surprising fact: if you have an accident at just 30 miles an hour, the force with which you can be thrown against the steering wheel, dash, or windshield pillar amounts to several thousand pounds - a force you simply cannot brace yourself against or withstand, and it all takes place in about seven-tenths of a second, so there's no time to take evasive action or do anything at all. What you can do is wear seat belts all the time on every trip. Which brings us to another fact that may surprise you. If everyone wore a seat belt all the time, serious injuries due to car accidents would be reduced by an incredible 70% - that's right, 70%! Think about it. If you're not wearing a seat belt, what's holding you back? A message from the federal Ministry of Transport.

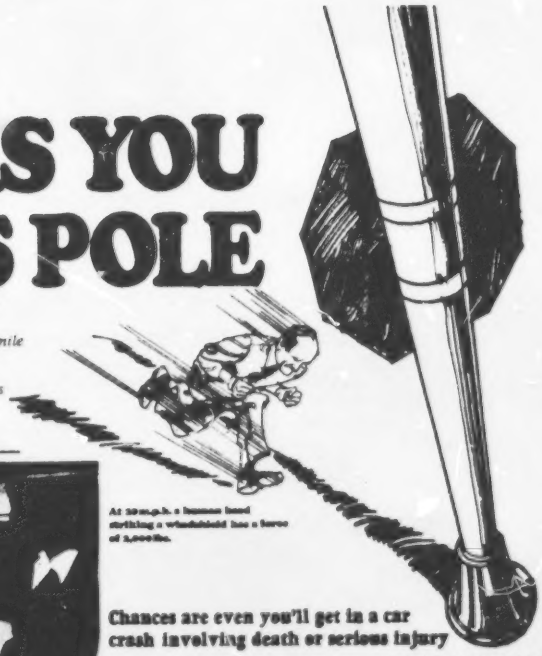
"Run Over" Radio Commercial

ANNCR: Some people believe it's better to get thrown clear in a car crash. But getting thrown clear isn't a simple case of ejection. Severe injuries can be caused by leaving the vehicle, and if you car was travelling at 30 miles an hour, then that's the speed at which you'll hit the concrete pavement, or a street lighting pole, or worse - you could be run over by another car, or truck as you're lying there stunned in the middle of the road. It's a fact, and so is this: last year in one province alone, 500 people died as a result of getting thrown clear. Which brings us to the most staggering fact of all: it's estimated that 400 of those deaths could have been prevented if the person had remained in the car, and been restrained by the use of seat belts. Think about it. If you're not wearing a seat belt, what's holding you back? A message from the federal Ministry of Transport.

"Collide" Radio Commercial

ANNCR: If you're travelling along the road in your car at 30 miles an hour and you crash, you crash around too - like into the steering wheel, the dash, or the windshield pillar, and you get hurt. Sometimes passengers and drivers collide with each other inside the car, and get injured that way too. But if you're wearing seat belts, they restrain your movements inside the car, make you part of the car, and prevent you from being thrown forward, sideways, or backwards. That's how seat belts work, and there are facts to back it up. If everyone wore seat belts all the time on every trip, deaths due to car accidents would be reduced by 50%; serious injuries by 70%; minor injuries by 40%. Think about it. If you're not wearing a seat belt, what's holding you back? A message from the federal Ministry of Transport.

RUN AS FAST AS YOU CAN INTO THIS POLE



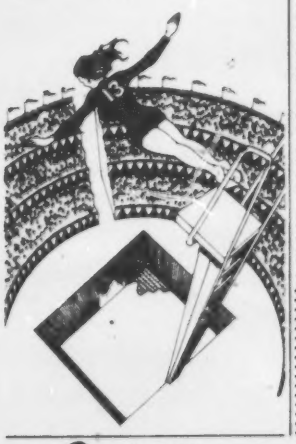
It is not easy to appreciate just how severe the human collision can be even in low-speed crashes. To help understand what happens, imagine someone walking briskly head-first into a steel post such as a car windshield pillar. This would be about a 3 or 4 mile per hour collision. A person would probably survive without serious injury.

Then imagine him running full speed into the steel post. If he ran fast, this would be about a 15 mile per hour collision. His injuries would be severe – he might not survive.

Now imagine his head striking the post at 30 miles per hour. The force would be four times greater than at 15 miles per hour and the person would not survive.

It's not the fall that kills you, it's the stop at the end

And it's not the car's collision that hurts in a crash. It's your collision inside the car. When a car hits something it buckles and bends and then comes to a stop. The second, more important collision is what happens to you. If you're not restrained by seat belts in the car you bounce around until your body or head hits something like the steering wheel or dash. And hitting something that hard with a force of several thousand pounds causes serious injuries and possibly death. Lap and seat belts keep you in your seat and prevent the second collision. The one that hurts.



The human collision and how to avoid it

In a 30 m.p.h. barrier crash the car is crushed a couple of feet and then comes to a stop. Occupants of the car keep moving at thirty miles per hour towards the point of impact where they slam into the steering wheel, windshield or some other part of the car. This is the Human Collision. The human collision can often involve two or more people. Drivers and front passengers can be injured by rear seat passengers being thrown forward. And when people carry small children on their laps, the adult can crush the child under the severe forces of a crash. To avoid the human collision the occupants of a car must come to a gradual stop without being thrown forward. And this can be done by holding the occupant in his seat by the use of belts. The difference between the belted occupants' stopping distance and the unbelted occupants' stopping distance is often the difference between life and death.

At 30 m.p.h. a human head striking a windshield has a force of 2,000 lbs.

Chances are even you'll get in a car crash involving death or serious injury

Every person who uses the roads risks injuries or death. And there's no getting away from it. Look at the facts of all the people now living in Ontario (2.5%, that's 962,850 real living persons) will be killed or injured in a car accident over the next ten years. Over the next forty years 1.5^{25}, 2,580,535 people, will be killed or injured. And if you are now under 15 your chances of being killed or injured in the next forty years are 44%. No one can predict when these accidents will happen and no one can look into the future and tell who these people will be. You can drive more carefully, you can avoid drinking and driving, you could even drive less. But none of these steps will guarantee your continuity. There is one sure way to cut your risk in half and that's by wearing seat belts. They won't stop accidents, but they will reduce your chances of death by 50%, serious injuries by 70%, and minor injuries by 40%. No one is immune to accidents.

I everyone always wore seat belts deaths due to car crashes would decrease by 50%. Serious injuries by 70% and minor injuries by 40%.

Fasten one of seat belts

Children are a high risk for head injuries

Because a small child has a large, fairly heavy head and fragile skull, it is more likely to suffer serious head injuries. Even in low speed accidents. Seventeen percent of car occupants killed or injured in Ontario in 1971 were children under the age of nineteen. When riding with children remember they act ups with curiosity. So make sure that they have their seat belts fastened. At all times in every trip.

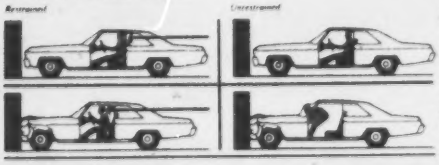
No one is immune to accidents

Look what Mrs. Mathews picked up shopping today

A minor accident that led to some not so minor injuries. Because Mrs. Mathews, like many other people, only wears seat belts on a long trip. But facts show that the accident rate is low on expressways and that short trips are potentially more dangerous. Even though the speeds are lower [illegible] people drive [illegible] a great deal more than the drive long distances. Therefore, the chances of being involved in an accident close to home are greater.

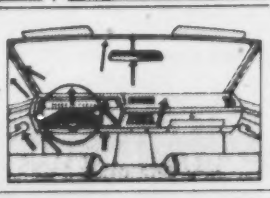
The danger zone

How seat belts work.



Dash Dangers

Many parts of the car interior can cause head and chest injuries. And even though the dash may be padded, underneath is something pretty solid. And being thrown against any part of the car [illegible] is potentially dangerous. Rear view mirrors can become lethal glass splinters, glove compartments fall [illegible] open presents a sharp cutting edge. The only way to avoid being these dash dangers in an accident is to wear lap and shoulder belts to restrain you and make you part of the car.



Many parts of the car interior can cause head and chest injuries

At 15-20 m.p.h. on a short trip that was made at least once a day for for the past 18 years this happened

Pre-crash

Vehicle one, a 1969 Buick, was entering an uncontrolled residential intersection at between 15-20 m.p.h. The driver was taking his mother-in-law to his home, a short trip that he made at least once a day for the past 18 years. Vehicle two, a 1971 Plymouth, also entered the intersection at a speed of 30 m.p.h. and collided with vehicle one.

Crash

The entire front end of vehicle two struck vehicle one on the left quarter panel and drivers door. Vehicle one struck a tree and rebounded to collide once again with vehicle two. Neither driver recalled taking any evasive action.

On impact the driver of vehicle one was thrown against the driver's door his knees struck the lower A-pillar and brake lever. On impact with the tree he was thrown forward against steering wheel and his head struck the windshield. Passenger in vehicle one was thrown against the driver and steering column. On impact with the tree she was thrown forward into instrument panel and her head struck the windshield.

Driver of vehicle two was thrown forward and both knees contacted the lower instrument panel his head contacted the windshield which shattered.

Injuries/causation

Driver vehicle one

1. Cerebral concussion, hematoma and laceration to forehead/upper mid rail, rearview mirror, windshield header.
2. Fracture of left lid, 4th and 5th ribs/interior left door panel.
3. Pain left knee/parking brake, lower A-pillar.

Passenger vehicle one

1. Cerebral injury/instrument panel, steering assembly.
2. Fractured left clavicle/steering assembly and driver.

Driver vehicle two

1. Superficial lacerations to head/windshield.

Conclusions.

All injuries to all three victims were caused through contact with vehicle interiors and other occupants, through unrestrained movement in vehicles through out the crash phase. Injuries would have been avoided or kept to a minor nature through use of seat belts which were installed in both vehicles.

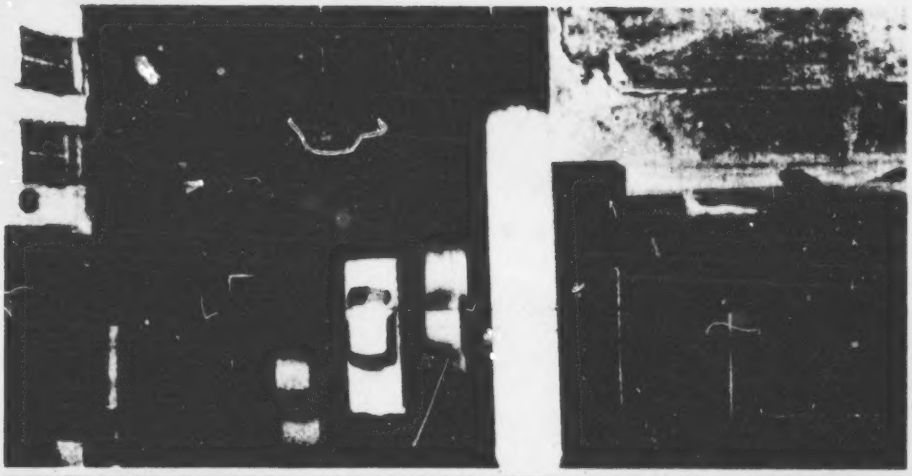
Imagine trying to control your car after being hit by this man

A professional boxer can throw a punch, one that would probably make most people unconscious. But a boxer's punch is nothing compared to the force with which you can hit the dash. Even at thirty miles an hour. And when you hit something at that speed and force you're in no condition to control your car which you may have to if the first impact was only a sideswipe and you're still moving – towards a lighting pole, or across to another traffic lane. To keep you in your seat and away from hitting the dash wear seat belts. All the time, on every trip.

If you're not wearing a seat belt what's holding you back?

Signature

TAKE A THREE STORY JUMP INTO MOVING TRAFFIC.



There are some common misconceptions surrounding seat belts. Mythical reasons for not buckling up. We would like to dispel one. The old, "It's better to be thrown clear in an accident" fable. So, let's do it in a way you can feel. Being "thrown clear", even at 30 m.p.h. is the equivalent to leaping out a third storey window to the street. Because that's the speed you'll be doing when you arrive. No doubt, that would cause serious injury. But, it could get worse. Because besides hitting pavement or post, there's a good chance another vehicle will hit you. And, that could kill. It's the whole idea behind seat belts. To make you part of the car. Not the pavement. And while fables lie, facts don't. Here are three. First, it is thirty times safer to remain inside the car during an accident. Secondly, about 25% of all passenger and driver deaths result from being "thrown clear." And last, but not least, 80% of these deaths could have been prevented if the person had stayed in the car. So now, the next time someone gives you the old "thrown clear" story, you can tell him exactly where to get off.

Getting "thrown clear" is something like this.

When you get thrown clear at 30 m.p.h.

That's the speed at which you hit the concrete

Or a lighting pole

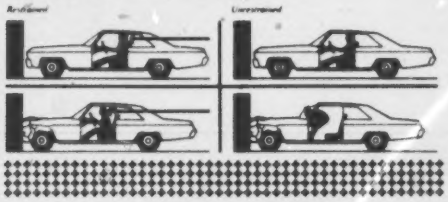
Or maybe you're just lying there stunned in the middle of the road.

An astronaut experiences about 10 G's accelerating. You can experience about 45 G's stopping. Dead.

If a full size American car travelling at 15 m.p.h. hits a brick wall, or another car of the same weight travelling at the same speed, it will stop in about 15 inches. The deceleration rate for the car averages about 6 G's. But any driver or passenger not belted into the car will continue forward into the dash and windshield and experience a deceleration rate of 45 G's. This is far above the threshold of injury and could quite easily result in death. The impact is absorbed by the head, chest and abdomen, all of which involve vital organs.

Seat belts make you part of the car and allow you to decelerate with it if you crash. And, of course, the forces are absorbed at much lower rates below the injury level.

How seat belts work.



How can you keep control if you're not in the driver's seat?

Seat belts not prevent injury or death but they sometimes prevent a minor accident from becoming a disaster. And there is positive evidence that when seat belts keep a driver behind the wheel, everyone is safer.

Item: An unbelted driver took a corner too fast. He was thrown off balance and lost control of the car. A collison resulted.

Item: A car sideswiped a parked car. The driver (unbelted) lost control of the car, which swerved across the roadway where it collided with an on-coming car. No injury resulted from the collision with the parked car, but serious injury occurred to occupants of both cars in the head-on collision.

Item: While crossing a bridge, the right front wheel of a bus ran over a cement block which had fallen from a truck load of cement blocks. The severe bounce threw the driver out of his seat into the stairwell. Out of control, the bus ran off the bridge. There was only one survivor.

Item: In Calgary, a driver of a light car ran a red light and collided with the right side of a station wagon. The driver (unbelted) was thrown to the right side of the vehicle. In this passage he was fatally stabbed by the popped-open door of the glove compartment. Had he been belted it is altogether likely that no injury at all would have resulted. The station wagon, which might have become an unguided missile was spun around by the impact and stopped by a snow bank.

Item: A large truck lightly sideswiped a parked car. This trivial accident spilled the driver off his seat. The truck went over the centre line and scored on nine other vehicles in head-on, sideswipes, injuring twelve people.

So safety belts can prevent accidents and then prevent accidents from becoming big ones.

What are your chances? You figure it out.

Fact: There's a 50/50 chance you will be in a car crash involving death or serious injury.

Fact: Of all the people now living in Ontario, 12.5% (90,280 people) will be killed or injured in a car crash over the next ten years.

Fact: Over the next 40 years, 33.5% (2,580,535 people) in Ontario will be killed or injured in a car crash.

If you wore seat belts all the time on every trip...

Fact: Your chances of death would be reduced by 50%.

Fact: Your chances of serious injury would be reduced by 70%.

Fact: Your chances of minor injury would be reduced by 40%.

Brace yourself.

People who don't wear seat belts for city driving don't understand that they can't brace themselves against the forces of low speed accidents.

To give you some idea of the forces involved, imagine being able to hold up the world weight lifting record over 500 lbs. Not an average task. Now consider that the forces of a crash at just 30 m.p.h. involve forces up to 2,000 lbs. And it all happens in about 7/10ths of a second. Something you certainly can't brace yourself against.

Seat belts absorb the forces of a crash and make it possible for you to survive.

If you're not wearing a seat belt what's holding you back?

Signature

APPENDIX B: Questionnaires used in the Evaluation

STUDY #5109-2

P.E.I. 15 | ST. JN, NB 21 | HFG 61 | CAL. 81 | ED. 82 | VAN. 91 | VIC. 92

ST. JOHN, NFLD. 01 | HAL. 11 | MTL. 31 | TOR. 41 | LON. 45 | PREST. 46 | REG. 71 | SASK. 72

Good _____. I'm Ms. _____ of Adcom Research Limited and we are conducting a survey about safety.

(ASK TO SPEAK WITH MALE/FEMALE 18 OR OVER)

INTVR: ON COMPLETION OF INTERVIEW, PLEASE CONFIRM NAME, PHONE #, ETC.

NAME: _____

PHONE #: ☐☐☐-☐☐☐☐

DATE: _____

INTVR #: ☐☐☐☐☐☐ L. D. 1 7

A. *Since I have an age quota to fill, would you please tell me which age group I should check you in?*

(READ LIST)

Under 18	(TERMINATE)		
Under 25	(CONTINUE)	1	10
25 - 34	(CONTINUE)	2	
35 - 49	(CONTINUE)	3	
50 - 64	(CONTINUE)	4	
65 or over	(CONTINUE)	5	
(Refused)	(TERMINATE)		

B. Respondent is:

Male	1	11
Female	2	

1. *Now, I would like to read you some statements, and you tell me how much you agree or disagree by using a scale from 0 to 6. The more you agree with the statement, the higher the number you will give. Now, how would you rate the statement* (READ LIST)?

(ROTATE AND "X" FIRST ASKED)

		AGREE				DISAGREE			DK	
☐	1a. *With seat belts on, you can easily become over confident.*	6	5	4	3	2	1	0	9	12
☐	1b. *You cannot avoid injury in a car accident by bracing yourself, even when travelling under 30 miles per hour.*	6	5	4	3	2	1	0	9	13
☐	1c. *It is important to wear seat belts for city driving because most serious accidents occur at low speeds.*	6	5	4	3	2	1	0	9	14
☐	1d. *In an accident a seat belt can be dangerous if it is worn too tightly.*	6	5	4	3	2	1	0	9	15
☐	1e. *In a car accident injury or death does not often occur by being tossed around inside the car.*	6	5	4	3	2	1	0	9	16
☐	1f. *A seat belt helps keep a driver in control of his car.*	6	5	4	3	2	1	0	9	17
☐	1g. *In most accidents it is better to be thrown clear.*	6	5	4	3	2	1	0	9	18
☐	1h. *Seat belts give you support and lessen fatigue.*	6	5	4	3	2	1	0	9	19
☐	1i. *Wearing seat belts is dangerous if an accident involves fire or sinking in water.*	6	5	4	3	2	1	0	9	20

(PLEASE TURN AND CONTINUE)

STUDY #5109-2

2. *Now, please think of the last ten times you were in a car, of those ten times, on about how many did you wear a seat belt?*

(DO NOT READ LIST)

0/Never	00	
1	01	
2	02	
3	03	
4	04	21
5	05	22
6	06	
7	07	
8	08	
9	09	
10/Every time	10	
DK	11	
Refused	12	

3. *In the past month, have you seen any newspaper advertising about seat belts?*

Yes	1	23
No	2	
DK	3	
Refused	9	

4. *Have you heard any radio advertising about seat belts in the past month?*

Yes	1	24
No	2	
DK	3	
Refused	9	

5. *And have you seen any television advertising about seat belts in the past month?*

Yes	1	25
No	2	
DK	3	
Refused	9	

6. (IF "YES" AT Q. 3, CONTINUE) (OTHERWISE, SKIP TO Q. 7)

Would you please tell me everything you remember about the newspaper advertisements about seat belts? (PROBE) *Anything else?*

	( )	26
	( )	28
	( )	30
	( )	32
DK/Refused	99	

7. (ROTATE Q. 7a-c AND "X" FIRST ASKED)

☐ 7a. *Do you remember seeing a full page newspaper ad with the head and shoulders of a boxer in the bottom right corner, and a man running into a telephone pole at the top of the page?*

Yes	1	44
No	2	
DK	3	
Refused	9	

☐ 7b. *Do you remember seeing a full page newspaper ad with a weightlifter holding barbells at the bottom right corner of the page, and, at the top, a scene looking down from a high place on cars below?*

Yes	1	45
No	2	
DK	3	
Refused	9	

☐ 7c. *Do you remember seeing a newspaper ad showing a dog on a pony;s back at the bottom right hand corner, and a pair of broken eye glasses at the top?*

Yes	1	46
No	2	
DK	3	
Refused	9	

(CONTINUE WITH NEXT PAGE)

STUDY #5109-2

(IF "YES" AT Q. 4, CONTINUE) (OTHERWISE, SKIP TO Q. 9)

8. *Now, would you please tell me <u>everything</u> you remember about the radio advertisements about seat belts?* (PROBE) *Anything else?*

( ) 47
( ) 49
( ) 51
( ) 53

DK/Refused 99

9. (ROTATE Q. 9a-d AND "X" FIRST ASKED)

☐ 9a. *Do you remember the radio commercial which said: "It all takes place in about seven tenths of a second"?*
Yes 1
No 2
DK/Refused 9 — 55

☐ 9b. *Do you remember the radio commercial which said: "Teach your children to love their seat belts"?*
Yes 1
No 2
DK/Refused 9 — 56

☐ 9c. *How about the radio commercial which said: "Or worst - you could be run over by another car, or truck, while you are lying there stunned in the middle of the road"?*
Yes 1
No 2
DK/Refused 9 — 57

☐ 9d. *Do you remember the radio commercial which said: "Sometimes passengers and drivers collide with each other inside the car and get injured that way"?*
Yes 1
No 2
DK/Refused 9 — 58

10. (IF "YES" AT Q. 5, CONTINUE) (OTHERWISE, SKIP TO Q. 11)

And would you please tell me everything you remember about the television advertising about seat belts? (PROBE) *Anything else?*

( ) 59
( ) 61
( ) 63
( ) 65

DK/Refused 99

11. *Do you remember any of the following television advertisements about seat belts?*

(ROTATE Q. 11a-d AND "X" FIRST ASKED)

(READ LIST)	Yes	No	DK/Ref.	
☐ 11a. *A commercial showing an egg being smashed in a box?*	1	2	9	67
☐ 11b. *A commercial showing a pumpkin being thrown out of a car and hitting a pole or being squashed on the ground or run over by a truck?*	1	2	9	68
☐ 11c. *A commercial showing a marble sinking in a bowl of gravy?*	1	2	9	69
☐ 11d. *A commercial showing a heavy metal weight dropping on a coconut?*	1	2	9	70

12. *We would like you to think about a law that would make wearing seat belts compulsory for those who drive or ride in a car. Now, using a scale from 0-6, would you tell me how you feel about the passage of such a law? The more <u>favourable</u> you are, the higher the number you will give, the more <u>unfavourable</u> you are, the lower the number you will give.*

FAVOURABLE						UNFAVOURABLE	DK	
6	5	4	3	2	1	0	9	71

(RETURN TO TOP OF FIRST PAGE AND CONFIRM NAME, ETC.) ① 72

STUDY #5109-2		P.E.I. 15	ST. JN, NB 21	MPG 61	CAL. 81	ED. 82	VAN. 91	VIC. 92	
		ST. JOHN, NFLD. 01	HAL. 11	MTL. 31	TOR. 41	LON. 45	PREST. 46		
						REG. 71	ASK. 72		

Good _____. I'm Ms. _____ of Adcom Research Limited and we are conducting a survey about safety.

(ASK TO SPEAK WITH MALE/FEMALE 18 OR OVER)

INTVR: ON COMPLETION OF INTERVIEW, PLEASE CONFIRM NAME, PHONE #, ETC.

NAME: _____

PHONE #: ☐☐☐-☐☐☐☐

DATE: _____

INTVR #: ☐☐☐☐☐☐ L. D. 1 | 7

A. *Since I have an age quota to fill, would you please tell me which age group I should check you in?*

(READ LIST)

Under 18	(TERMINATE)		
Under 25	(CONTINUE)	1	10
25 - 34	(CONTINUE)	2	
35 - 49	(CONTINUE)	3	
50 - 64	(CONTINUE)	4	
65 or over	(CONTINUE)	5	
(Refused)	(TERMINATE)		

B. Respondent is:

Male	1	11
Female	2	

1. *Now, I would like to read you some statements, and you tell me how much you agree or disagree by using a scale from 0 to 6. The more you agree with the statement, the higher the number you will give. Now, how would you rate the statement* (READ LIST)?

(ROTATE AND "X" FIRST ASKED)

		AGREE					DISAGREE		DK	
☐	1a. *With seat belts on, you can easily become over confident.*	6	5	4	3	2	1	0	9	12
☐	1b. *You cannot avoid injury in a car accident by bracing yourself, even when travelling under 30 miles per hour.*	6	5	4	3	2	1	0	9	13
☐	1c. *It is important to wear seat belts for city driving because most serious accidents occur at low speeds.*	6	5	4	3	2	1	0	9	14
☐	1d. *In an accident a seat belt can be dangerous if it is worn too tightly.*	6	5	4	3	2	1	0	9	15
☐	1e. *In a car accident injury or death does not often occur by being tossed around inside the car.*	6	5	4	3	2	1	0	9	16
☐	1f. *A seat belt helps keep a driver in control of his car.*	6	5	4	3	2	1	0	9	17
☐	1g. *In most accidents it is better to be thrown clear.*	6	5	4	3	2	1	0	9	18
☐	1h. *Seat belts give you support and lessen fatigue.*	6	5	4	3	2	1	0	9	19
☐	1i. *Wearing seat belts is dangerous if an accident involves fire or sinking in water.*	6	5	4	3	2	1	0	9	20

(PLEASE TURN AND CONTINUE)

STUDY #5109-2

2. *Now, please think of the last ten times you were in a car, of those ten times, on about how many did you wear a seat belt?*

(DO NOT READ LIST)

0/Never	00	
1	01	
2	02	
3	03	
4	04	
5	05	
6	06	
7	07	21
8	08	22
9	09	
10/Every time	10	
DK	11	
Refused	12	

3. *In the past month, have you seen any newspaper advertising about seat belts?*

Yes	1	23
No	2	
DK	3	
Refused	9	

4. *Have you heard any radio advertising about seat belts in the past month?*

Yes	1	24
No	2	
DK	3	
Refused	9	

5. *And have you seen any television advertising about seat belts in the past month?*

Yes	1	25
No	2	
DK	3	
Refused	9	

6. (IF "YES" AT Q. 3, CONTINUE) (OTHERWISE, SKIP TO Q. 7)

Would you please tell me everything you remember about the newspaper advertisements about seat belts? (PROBE) *Anything else?*

( ) 26
( ) 28
( ) 30
( ) 32

DK/Refused 99

7. *Do you remember seeing any of the following pictures or newspaper ads about seat belts?*

(ROTATE Q. 7a-J AND "X" FIRST ASKED)

	(READ LIST)	Yes	No	DK/Ref.	
☐	7a. *The head and shoulders of a boxer.*	1	2	9	34
☐	7b. *A man moving into a telephone pole.*	1	2	9	35
☐	7c. *A girl in a jump suit diving off a high board into a tank.*	1	2	9	36
☐	7d. *A young woman at the wheel with seat belts on.*	1	2	9	37
☐	7e. *A lady holding a parcel and using a crutch.*	1	2	9	38
☐	7f. *A dog on a pony's back.*	1	2	9	39
☐	7g. *A long, side view of an astronaut.*	1	2	9	40
☐	7h. *A drawing of a man off balance at the wheel of a car.*	1	2	9	41
☐	7i. *A weightlifter holding up a pair of barbells in one hand.*	1	2	9	42
☐	7j. *A scene looking down from a high place on cars in the street below.*	1	2	9	43

(CONTINUE WITH NEXT PAGE)

STUDY #5109-2

(IF "YES" AT Q. 4, CONTINUE) (OTHERWISE, SKIP TO Q. 9)

8. *Now, would you please tell me everything you remember about the radio advertisements about seat belts? (PROBE) Anything else?*

( ) 47
( ) 49
( ) 51
( ) 53

DK/Refused 99

9. (ROTATE Q. 9a-d AND "X" FIRST ASKED)

☐ 9a. *Do you remember the radio commercial which said: "It all takes place in about seven tenths of a second"?*	Yes No DK/Refused	1 2 9	55
☐ 9b. *Do you remember the radio commercial which said: "Teach your children to love their seat belts"?*	Yes No DK/Refused	1 2 9	56
☐ 9c. *How about the radio commercial which said: "Or worst - you could be run over by another car, or truck, while you are lying there stunned in the middle of the road"?*	Yes No DK/Refused	1 2 9	57
☐ 9d. *Do you remember the radio commercial which said: "Sometimes passengers and drivers collide with each other inside the car and get injured that way"?*	Yes No DK/Refused	1 2 9	58

10. (IF "YES" AT Q. 5, CONTINUE) (OTHERWISE, SKIP TO Q. 11)

And would you please tell me everything you remember about the television advertising about seat belts? (PROBE) Anything else?

( ) 59
( ) 61
( ) 63
( ) 65

DK/Refused 99

11. *Do you remember any of the following television advertisements about seat belts?*

(ROTATE Q. 11a-d AND "X" FIRST ASKED)

(READ LIST)	Yes	No	DK/Ref.	
☐ 11a. *A commercial showing an egg being smashed in a box?*	1	2	9	67
☐ 11b. *A commercial showing a pumpkin being thrown out of a car and hitting a pole or being squashed on the ground or run over by a truck?*	1	2	9	68
☐ 11c. *A commercial showing a marble sinking in a bowl of gravy?*	1	2	9	69
☐ 11d. *A commercial showing a heavy metal weight dropping on a cocoonut?*	1	2	9	70

12. *We would like you to think about a law that would make wearing seat belts compulsory for those who drive or ride in a car. Now, using a scale from 0-6, would you tell me how you feel about the passage of such a law? The more favourable you are, the higher the number you will give, the more unfavourable you are, the lower the number you will give.*

FAVOURABLE						UNFAVOURABLE	DK	
6	5	4	3	2	1	0	9	71

(RETURN TO TOP OF FIRST PAGE AND CONFIRM NAME, ETC.) ① 72

STUDY #3109-2		P.E.I. 15	ST. JN, NB 21	MPG 61	CAL. 81	ED. 82	VAN. 91	VIC. 92
		ST. JOHN, NFLD. 01	HAL. 11	MTL. 35	TOR. 41	LON. 45	PREST. 46	
						REG. 71	SASK. 72	

Good _____. I'm Ms. _____ of Adcom Research Limited and we are conducting a survey about safety.

(ASK TO SPEAK WITH MALE/FEMALE 18 OR OVER)

INTVR: ON COMPLETION OF INTERVIEW, PLEASE CONFIRM NAME, PHONE #, ETC.

NAME: _____

PHONE #: ☐☐☐-☐☐☐☐

DATE: _____

INTVR #: ☐☐☐☐☐☐ L. D. 1 | 7

A. *Since I have an age quota to fill, would you please tell me which age group I should check you in?*

(READ LIST)

Under 18	(TERMINATE)		
Under 25	(CONTINUE)	1	10
25 - 34	(CONTINUE)	2	
35 - 49	(CONTINUE)	3	
50 - 64	(CONTINUE)	4	
65 or over	(CONTINUE)	5	
(Refused)	(TERMINATE)		

B. Respondent is:

Male	1	11
Female	2	

1. *Now, I would like to read you some statements, and you tell me how much you agree or disagree by using a scale from 0 to 6. The more you agree with the statement, the higher the number you will give. Now, how would you rate the statement* (READ LIST)?

(ROTATE AND "X" FIRST ASKED)

		AGREE				DISAGREE			DK	
☐	1a. *With seat belts on, you can easily become over confident.*	6	5	4	3	2	1	0	9	12
☐	1b. *You cannot avoid injury in a car accident by bracing yourself, even when travelling under 30 miles per hour.*	6	5	4	3	2	1	0	9	13
☐	1c. *It is important to wear seat belts for city driving because most serious accidents occur at low speeds.*	6	5	4	3	2	1	0	9	14
☐	1d. *In an accident a seat belt can be dangerous if it is worn too tightly.*	6	5	4	3	2	1	0	9	15
☐	1e. *In a car accident injury or death does not often occur by being tossed around inside the car.*	6	5	4	3	2	1	0	9	16
☐	1f. *A seat belt helps keep a driver in control of his car.*	6	5	4	3	2	1	0	9	17
☐	1g. *In most accidents it is better to be thrown clear.*	6	5	4	3	2	1	0	9	18
☐	1h. *Seat belts give you support and lessen fatigue.*	6	5	4	3	2	1	0	9	19
☐	1i. *Wearing seat belts is dangerous if an accident involves fire or sinking in water.*	6	5	4	3	2	1	0	9	20

(PLEASE TURN AND CONTINUE)

STUDY #5109-2

2. *Now, please think of the last ten times you were in a car, of those ten times, on about how many did you wear a seat belt?*

(DO NOT READ LIST)

0/Never	00	
1	01	
2	02	
3	03	
4	04	
5	05	
6	06	
7	07	21
8	08	22
9	09	
10/Every time	10	
DK	11	
Refused	12	

4. *Have you heard any radio advertising about seat belts in the past month?*

Yes	1	24
No	2	
DK	3	
Refused	9	

5. *And have you seen any television advertising about seat belts in the past month?*

Yes	1	25
No	2	
DK	3	
Refused	9	

(IF "YES" AT Q. 4, CONTINUE) (OTHERWISE, SKIP TO Q. 9)

8. *Now, would you please tell me everything you remember about the radio advertisements about seat belts?* (PROBE) *Anything else?*

( ) 47
( ) 49
( ) 51
( ) 53

DK/Refused 99

9. (ROTATE Q. 9a-d AND "X" FIRST ASKED)

☐ 9a. *Do you remember the radio commercial which said: "It all takes place in about seven tenths of a second "?*

Yes	1	55
No	2	
DK/Refused	9	

☐ 9b. *Do you remember the radio commercial which said: "Teach your children to love their seat belts"?*

Yes	1	56
No	2	
DK/Refused	9	

☐ 9c. *How about the radio commercial which said: "Or worst - you could be run over by another car, or truck, while you are lying there stunned in the middle of the road"?*

Yes	1	57
No	2	
DK/Refused	9	

☐ 9d. *Do you remember the radio commercial which said: "Sometimes passengers and drivers collide with each other inside the car and get injured that way"?*

Yes	1	58
No	2	
DK/Refused	9	

10. (IF "YES" AT Q. 5, CONTINUE) (OTHERWISE, SKIP TO Q. 11)

And would you please tell me everything you remember about the television advertising about seat belts? (PROBE) *Anything else?*

( ) 59
( ) 61
( ) 63
( ) 65

DK/Refused 99

(CONTINUE WITH NEXT PAGE)

STUDY #5109-2

11. *Do you remember any of the following television advertisements about seat belts?*
(ROTATE Q. 11a-d AND "X" FIRST ASKED)

(READ LIST)	Yes	No	DK/Ref.	
☐ 11a. *A commercial showing an egg being smashed in a box?*	1	2	9	67
☐ 11b. *A commercial showing a pumpkin being thrown out of a car and hitting a pole or being squashed on the ground or run over by a truck?*	1	2	9	68
☐ 11c. *A commercial showing a marble sinking in a bowl of gravy?*	1	2	9	69
☐ 11d. *A commercial showing a heavy metal weight dropping on a coconut?*	1	2	9	70

12. *We would like you to think about a law that would make wearing seat belts compulsory for those who drive or ride in a car. Now, using a scale from 0-6, would you tell me how you feel about the passage of such a law? The more favourable you are, the higher the number you will give, the more unfavourable you are, the lower the number you will give.*

FAVOURABLE						UNFAVOURABLE	DK		
6	5	4	3	2	1	0	9	①	71 / 72

13. *If it were possible to vote for or against the passage of such a law, how would you vote?*

(READ LIST)
For 1
Against 2
(DK/Refused) 9 — 73

14. *Would you say that you either drive or ride in a car:*

(READ LIST)
Almost every day 1
2 - 3 times a week 2
Once a week 3
Less than once a week 4
Never 5
(DK/Refused) 9 — 74

15. *Is there a car in your family with seat belts in it?*

Yes 1
No 2
DK/Refused 9 — 75

16. *Are there any children under the age of 16 living in your household?*

Yes 1
No 2
DK/Refused 9 — 76

17. *Are you eligible to vote in a Provincial Election?*

Yes 1
No 2
DK/Refused 9 — 77

18. *Did you vote in the last Provincial Election?*

Yes 1
No 2
DK/Refused 9 — 78

(RETURN TO TOP OF FIRST PAGE AND CONFIRM NAME, ETC.)

STUDY #5109-2	P.E.I. 15	ST. JN, NB 21	HFX. 61	CAL. 81	ED. 82	VAN. 91	VIC. 92
	ST. JOHN, NFLD. 01	HAL. 17	MTL. 35	TOR. 41	LON. 45	PREST. 46	
					REG. 71	SASK. 72	

Good _____. I'm Mr. _____ of Adcom Research Limited and we are conducting a survey about safety.

(ASK TO SPEAK WITH MALE/FEMALE 18 OR OVER)

INTVR: ON COMPLETION OF INTERVIEW, PLEASE CONFIRM NAME, PHONE #, ETC.

NAME: _____

PHONE #: ☐☐☐-☐☐☐☐

DATE: _____

INTVR #: ☐☐☐☐☐☐ L. D. 1 7

A. *Since I have an age quota to fill, would you please tell me which age group I should check you in?*

(READ LIST)

Under 18	(TERMINATE)		10
Under 25	(CONTINUE)	1	
25 - 34	(CONTINUE)	2	
35 - 49	(CONTINUE)	3	
50 - 64	(CONTINUE)	4	
65 or over	(CONTINUE)	5	
(Refused)	(TERMINATE)		

B. Respondent is:

Male	1	11
Female	2	

1. *Now, I would like to read you some statements, and you tell me how much you agree or disagree by using a scale from 0 to 6. The more you agree with the statement, the higher the number you will give. Now, how would you rate the statement* (READ LIST)?

(ROTATE AND "X" FIRST ASKED)

		AGREE				DISAGREE			DK	
☐	1a. *With seat belts on, you can easily become over confident.*	6	5	4	3	2	1	0	9	12
☐	1b. *You cannot avoid injury in a car accident by bracing yourself, even when travelling under 30 miles per hour.*	6	5	4	3	2	1	0	9	13
☐	1c. *It is important to wear seat belts for city driving because most serious accidents occur at low speeds.*	6	5	4	3	2	1	0	9	14
☐	1d. *In an accident a seat belt can be dangerous if it is worn too tightly.*	6	5	4	3	2	1	0	9	15
☐	1e. *In a car accident injury or death does not often occur by being tossed around inside the car.*	6	5	4	3	2	1	0	9	16
☐	1f. *A seat belt helps keep a driver in control of his car.*	6	5	4	3	2	1	0	9	17
☐	1g. *In most accidents it is better to be thrown clear.*	6	5	4	3	2	1	0	9	18
☐	1h. *Seat belts give you support and lessen fatigue.*	6	5	4	3	2	1	0	9	19
☐	1i. *Wearing seat belts is dangerous if an accident involves fire or sinking in water.*	6	5	4	3	2	1	0	9	20

(PLEASE TURN AND CONTINUE)

STUDY #5109-2

2. *Now, please think of the last ten times you were in a car, of those ten times, on about how many did you wear a seat belt?*

(DO NOT READ LIST)

0/Never	00	
1	01	
2	02	
3	03	
4	04	21
5	05	22
6	06	
7	07	
8	08	
9	09	
10/Every time	10	
DK	11	
Refused	12	

5. *And have you seen any television advertising about seat belts in the past month?*

Yes	1	25
No	2	
DK	3	
Refused	9	

10. (IF "YES" AT Q. 5, CONTINUE) (OTHERWISE, SKIP TO Q. 11)

And would you please tell me everything you remember about the television advertising about seat belts? (PROBE) *Anything else?*

( ) 59
( ) 61
( ) 63
( ) 65

DK/Refused 99

11. *Do you remember any of the following television advertisements about seat belts?*

(ROTATE Q. 11a-d AND "X" FIRST ASKED)

(READ LIST)	Yes	No	DK/Ref.	
☐ 11a. *A commercial showing an egg being smashed in a box?*	1	2	9	67
☐ 11b. *A commercial showing a pumpkin being thrown out of a car and hitting a pole or being squashed on the ground or run over by a truck?*	1	2	9	68
☐ 11c. *A commercial showing a marble sinking in a bowl of gravy?*	1	2	9	69
☐ 11d. *A commercial showing a heavy metal weight dropping on a cocoanut?*	1	2	9	70

12. *We would like you to think about a law that would make wearing seat belts compulsory for those who drive or ride in a car. Now, using a scale from 0-6, would you tell me how you feel about the passage of such a law? The more favourable you are, the higher the number you will give, the more unfavourable you are, the lower the number you will give.*

FAVOURABLE						UNFAVOURABLE	DK	
6	5	4	3	2	1	0	9	71

(1) 72

(PLEASE RETURN TO TOP OF FIRST PAGE AND CONFIRM NAME, PHONE #, ETC.)

ÉTUDE #5109-2 MTL. 31 QUÉ. 32

Bon ___. Je suis Mme/Mlle _____ de la Compagnie de Recherches Adcom Limitée et nous conduisons un sondage sur la sécurité.

(DEMANDEZ À PARLER À UN HOMME/UNE FEMME DE 18 ANS OU PLUS)

INTVR: LORSQUE L'INTERVIEW EST TERMINÉE, VEUILLEZ VÉRIFIER LE NOM, # DE TÉL, ETC.

NOM: _____

DE TÉL: [ ][ ][ ]-[ ][ ][ ][ ]

DATE: _____

DE L'INTVR: [ ][ ][ ][ ][ ][ ]

French ① 8

A. Comme j'ai un quota à remplir, voulez-vous me dire à quel groupe d'âge vous appartenez?

(LISEZ LA LISTE)

Moins de 18	(TERMINEZ)		10
Moins de 25	(CONTINUEZ)	1	
25 - 34	(CONTINUEZ)	2	
35 - 49	(CONTINUEZ)	3	
50 - 64	(CONTINUEZ)	4	
65 et plus	(CONTINUEZ)	5	
(Refus)	(TERMINEZ)		

B. Le répondant est:

Un homme	1	11
Une femme	2	

I. Maintenant, je voudrais vous lire quelques énoncés et vous me direz si vous êtes d'accord ou non en utilisant une échelle de 0 à 6. Plus vous êtes d'accord avec l'énoncé, plus grand sera le chiffre que vous donnerez. Alors, comment évalueriez-vous l'énoncé (LISEZ LA LISTE)?

(ALTERNEZ ET METTEZ UN "X" AU PREMIER DEMANDÉ)

	D'ACCORD				EN DÉSACCORD			NSP	
☐ Ia. Quand on utilise les ceintures de sécurité, il est facile de se sentir trop confiant.	6	5	4	3	2	1	0	9	12
☐ Ib. Dans un accident d'auto le fait d'être attaché ne vous empêchera pas d'être blessé, même en roulant à moins de 30 milles à l'heure.	6	5	4	3	2	1	0	9	13
☐ Ic. Il est important de mettre les ceintures de sécurité en conduisant en ville parce que la plupart des accidents graves arrivent quand on roule lentement.	6	5	4	3	2	1	0	9	14
☐ Id. Une ceinture de sécurité peut devenir dangereuse dans un accident si elle est trop serrée.	6	5	4	3	2	1	0	9	15
☐ Ie. Dans un accident d'auto les blessures ou la mort ne sont pas souvent causées par le fait que la personne ait été projetée dans la voiture.	6	5	4	3	2	1	0	9	16
☐ If. La ceinture de sécurité aide le chauffeur à contrôler sa voiture.	6	5	4	3	2	1	0	9	17
☐ Ig. Dans la plupart des accidents il vaut mieux être projeté en dehors.	6	5	4	3	2	1	0	9	18
☐ Ih. Les ceintures de sécurité vous soutiennent et atténuent la fatigue.	6	5	4	3	2	1	0	9	19
☐ Ii. Le port des ceintures de sécurité est dangereux si dans un accident l'auto prend feu ou tombe à l'eau.	6	5	4	3	2	1	0	9	20

(VEUILLEZ TOURNER ET CONTINUER)

ÉTUDE #5109-2

9. Maintenant, voulez-vous penser aux dix dernières fois où vous étiez en voiture. De ces dix fois, combien de vois environ avez-vous utilisé la ceinture de sécurité?

(NE LISEZ PAS LA LISTE)

0/Jamais	00	21
1	01	
2	02	
3	03	
4	04	22
5	05	
6	06	
7	07	
8	08	
9	09	
10/A chaque fois	10	
NSP	11	
Refus	12	

5. Et avez-vous vu de la publicité à la télévision sur les ceintures de sécurité au cours du dernier mois?

Oui	1	25
Non	2	
NSP	3	
Refus	9	

10. (SI "OUI" À LA Q. 5, CONTINUEZ) (AUTREMENT, ALLEZ À LA Q. 11)

Voulez-vous me dire tout ce que vous vous souvenez de la publicité sur les ceintures de sécurité à la télévision? (APPROFONDISSEZ)
Rien d'autre?

( ) 59
( ) 61
( ) 63
( ) 65

NSP/Refus 99

11. Vous souvenez-vous des annonces publicitaires qui ont passé à la télévision sur les ceintures de sécurité?

(ALTERNEZ LES Q. 11a-d ET METTEZ UN "X" À LA PREMIÈRE DEMANDÉE)

(LISEZ LA LISTE)

	Oui	Non	NSP/Refus	
☐ 11a. Une annonce dans laquelle un oeuf se faisait écraser dans une boîte?	1	2	9	67
☐ 11b. Une annonce dans laquelle une citrouille se faisait éjecter d'une auto et allait frapper un poteau ou s'écrasait par terre ou se faisait écraser par un camion?	1	2	9	68
☐ 11c. Une annonce dans laquelle une bille s'enfonçait dans un bol de sauce?	1	2	9	69
☐ 11d. Une annonce dans laquelle un poids en métal lourd tombait sur une noix de coco?	1	2	9	70

12. Je voudrais que vous pensiez à une loi qui obligerait les chauffeurs de voitures ou les passagers à utiliser les ceintures de sécurité. En utilisant une échelle de 0 à 6, voulez-vous me dire ce que vous pensez d'une telle loi? Plus vous êtes en faveur, plus grand sera le chiffre que vous lui donnerez, moins vous êtes en faveur, plus petit sera votre chiffre.

EN FAVEUR						CONTRE	NSP	
6	5	4	3	2	1	0	9	71

(VEUILLEZ RETOURNER EN HAUT DE LA PREMIÈRE PAGE ET CONFIRMER LE NOM, LE NUMÉRO DE TÉLÉPHONE, ETC.) (1) 72

APPENDIX C: Percentages of Respondents Recognizing the Various Commercials by Wave by Province

		EGG			PUMPKIN			COCONUT			OVERALL			MARBLE		
		N	%	x^2	N	%	x^2	N	%	x^2	N	%	x^2	N	%	x^2
NFLD.	Pre	397	22.9	158.9***	397	18.1	148.1***	392	10.7	153.1***	400	32.5	166.3***	396	2.5	1.33
	Post	399	67.7		396	60.6		395	51.9		401	78.1		399	4.3	
N.S.	Pre	399	2.5	442.1***	400	3.8	387.7***	400	2.5	323.6***	400	7.8	506.8***	399	1.8	0.00
	Post	398	75.4		397	71.5		396	62.4		400	87.5		399	2.0	
P.E.I.	Pre	338	4.1	444.3***	339	3.5	426.7***	337	5.3	306.4***	341	10.0	482.9***	338	1.8	6.01*
	Post	398	82.2		396	79.8		393	69.2		400	91.0		399	5.5	
N.B.	Pre	318	9.7	355.2***	320	3.8	410.9***	323	5.3	271.6***	326	14.4	404.5***	323	1.5	5.47*
	Post	398	80.9		395	80.0		394	65.7		400	89.3		397	5.0	
QUE	Pre	397	2.5	467.1***	395	2.5	386.9***	395	2.5	304.7***	401	5.5	538.5***	396	2.5	3.55
	Post	412	77.4		411	69.6		411	60.1		419	86.6		410	5.4	
ONT.	Pre	391	4.9	415.9***	393	5.3	341.7***	393	2.0	358.1***	400	10.5	492.0***	395	1.3	0.30
	Post	397	76.6		397	69.3		390	66.4		399	89.2		398	2.0	
MAN.	Pre	400	3.3	335.4***	401	3.2	381.5***	398	2.5	251.2***	401	7.5	422.7***	398	2.0	0.33
	Post	401	64.8		402	69.9		395	53.2		403	79.7		402	1.2	
SASK.	Pre	400	20.5	324.2***	398	20.9	298.7***	398	15.1	228.6***	400	31.8	330.1***	400	0.0	6.17*
	Post	401	84.3		400	82.3		394	68.3		401	94.0		401	2.0	
ALTA.	Pre	399	18.5	209.2***	399	13.0	281.3***	397	8.6	253.4***	400	26.0	316.3***	399	0.5	5.82*
	Post	401	69.6		402	71.9		397	63.0		403	88.3		402	3.0	
B.C.	Pre	395	5.8	344.3***	397	4.3	398.2***	397	2.5	321.8***	401	10.2	420.6***	394	1.8	2.27
	Post	393	70.2		395	73.7		390	62.6		400	82.8		395	3.8	

*Indicates significance at .05

***Indicates significance at .001

C-2

TABLE C.1: Percentages of Respondents Recognizing the Television Commercials by Wave by Province

		SEVEN-TENTHS			RUN OVER			COLLIDE			OVERALL		
		N	%	χ^2	N	%	χ^2	N	%	χ^2	N	%	χ^2
NFLD	Pre	380	43.4	5.57*	339	28.3	43.0***	391	26.1	7.23**	400	53.3	25.5***
	Post	391	52.2		392	51.5		395	35.2		401	70.8	
N.S.	Pre	392	39.3	18.4***	394	16.0	83.9***	398	14.1	19.3***	400	46.5	50.6***
	Post	390	54.9		396	46.5		394	26.9		400	71.5	
P.E.I.	Pre	328	41.2	35.8***	331	18.4	54.8***	338	13.3	8.98**	341	48.7	43.1***
	Post	380	63.9		382	44.8		388	22.2		400	72.5	
N.B.	Pre	294	36.4	53.7***	315	16.2	145.7***	315	13.0	36.6***	326	42.0	89.7***
	Post	369	65.3		375	61.9		386	32.9		400	76.8	
ONT.	Pre	384	27.6	6.66**	392	12.5	35.9***	390	14.9	0.26	400	38.0	19.7***
	Post	380	36.6		385	30.4		390	13.3		399	53.9	
MAN.	Pre	390	24.9	32.3***	396	15.2	77.5***	397	12.1	18.4***	401	34.2	64.7***
	Post	391	44.5		396	43.9		399	24.1		403	62.8	
SASK.	Pre	395	39.7	29.5***	394	19.5	108.3***	394	14.5	21.9***	400	50.8	67.9***
	Post	398	59.3		395	55.7		398	28.4		401	78.8	
ALTA.	Pre	392	34.7	10.7**	399	19.3	28.2***	397	10.8	0.65	400	43.8	20.7***
	Post	385	46.5		395	36.5		394	12.9		403	60.0	
B.C.	Pre	394	37.8	15.4***	396	9.3	111.3***	396	9.3	11.4***	401	46.1	38.2***
	Post	386	52.1		393	42.5		393	17.8		400	68.0	

* Indicates significance at .05

** Indicates significance at .01

*** Indicates significance at .001

TABLE C.2: Percentages of Respondents Recognizing the Radio Commercials by Wave by Province

		BOXER-TELEPHONE POLE			WEIGHTLIFTER-SCENE			OVERALL		
		N	%	χ^2	N	%	χ^2	N	%	χ^2
P.E.I.	Pre	335	3.3	15.5***	334	3.9	12.4***	341	6.5	20.4***
	Post	388	11.3		392	11.2		400	17.8	
N.B.	Pre	319	4.7	5.79*	316	4.7	2.33	326	8.0	6.85**
	Post	389	9.8		394	7.9		400	14.5	
MAN.	Pre	399	3.8	1.05	397	3.8	2.44	401	7.0	2.57
	Post	397	5.5		402	6.5		403	10.4	
ALTA.	Pre	397	4.3	1.85	399	5.5	0.11	400	8.8	2.14
	Post	401	6.7		395	6.3		403	12.2	
B.C.	Pre	394	1.8	6.36*	399	3.5	0.86	401	4.7	6.17*
	Post	391	5.4		392	5.1		400	9.5	

* Indicates significance at .05
** Indicates significance at .01
*** Indicates significance at .001

TABLE C.3: Percentages of Respondents Recognizing the Omnibus Newspaper Ads by Wave by Province

APPENDIX D: Means and Standard Deviations of Attitude Questions by Wave by Province

		OVERCONFIDENT				BRACING				CITY				TIGHTLY				TOSSED			
		N	M	S.D.	t	N	M	S.D.	t	N	M	S.D.	t	N	M	S.D.	t	N	M	S.D.	t
NFLD.	Pre	379	2.84	2.03	0.46	378	3.58	2.04	0.21	377	3.53	2.16	0.61	366	2.14	1.92	-0.69	374	2.73	2.13	0.29
	Post	389	2.90	2.12		384	3.62	2.14		392	3.63	2.10		379	2.04	1.85		386	2.77	2.18	
N.S.	Pre	375	3.19	2.25	1.15	382	3.63	2.41	1.56	385	3.40	2.40	-0.36	368	1.74	2.14	0.32	363	3.36	2.28	0.96
	Post	377	3.38	2.29		381	3.90	2.36		376	3.34	2.40		359	1.79	2.22		374	3.52	2.34	
P.E.I.	Pre	333	3.42	2.13	-2.17*	327	3.70	2.20	0.79	330	3.25	2.31	3.05**	311	2.04	2.07	0.73	318	3.33	2.21	0.62
	Post	383	3.08	2.09		389	3.83	2.23		386	3.77	2.18		368	2.15	2.05		380	3.43	2.25	
N.B.	Pre	316	2.95	1.99	1.75	313	3.61	2.13	2.53*	312	3.97	2.02	0.47	306	1.85	1.88	0.51	307	3.34	2.10	0.14
	Post	383	3.22	2.04		392	4.02	2.07		386	4.04	2.07		359	1.93	1.86		373	3.36	2.18	
QUE.	Pre	378	3.14	2.41	3.25***	383	3.70	2.22	-3.08**	387	3.71	2.35	-0.91	365	1.92	2.07	0.16	372	2.79	2.31	-0.35
	Post	399	3.66	2.07		390	3.21	2.17		408	3.56	2.21		378	1.94	2.00		373	2.73	2.21	
ONT.	Pre	392	3.37	1.91	1.56	391	3.54	2.00	0.72	398	3.99	1.97	-0.75	378	2.03	1.93	-0.11	381	3.44	2.03	0.52
	Post	387	3.59	2.01		383	3.65	2.16		381	3.88	2.15		373	2.01	1.94		368	3.52	2.20	
MAN.	Pre	387	3.09	1.91	1.84	379	3.62	1.83	1.39	378	3.89	1.96	-0.31	362	2.15	1.83	0.11	372	3.32	2.00	1.68
	Post	385	3.35	2.08		383	3.82	2.08		384	3.85	2.03		352	2.16	1.94		367	3.57	2.13	
SASK.	Pre	389	3.52	1.90	-0.65	384	3.63	2.02	0.44	387	3.76	1.95	3.13**	357	2.57	2.01	-1.28	382	3.56	2.05	-0.95
	Post	394	3.43	1.88		395	3.70	2.03		394	4.18	1.81		380	2.38	1.90		391	3.41	2.07	
ALTA.	Pre	394	3.38	1.93	1.11	387	3.80	2.04	0.76	387	4.15	1.89	-0.86	373	2.02	1.98	1.01	382	3.66	2.15	2.34*
	Post	398	3.53	1.94		397	3.92	2.11		389	4.03	2.03		360	2.16	1.99		387	4.01	2.04	
B.C.	Pre	393	3.58	1.89	0.23	387	3.63	2.10	1.20	386	4.07	2.04	2.89**	373	2.02	1.92	0.22	375	3.58	2.09	0.83
	Post	389	3.61	2.00		387	3.82	2.21		391	4.48	1.95		373	2.06	2.03		376	3.70	2.17	

* Indicates significance at .05

** Indicates significance at .01

*** Indicates significance at .001

TABLE D.1: Means and Standard Deviations of Attitude Questions by Wave by Province

		CONTROL				THROWN CLEAR				SUPPORT/FATIGUE				FIRE/SINKING			
		N	M	S.D.	t	N	M	S.D.	t	N	M	S.D.	t	N	M	S.D.	t
NFLD.	Pre	386	3.86	2.11	1.68	363	3.05	2.17	2.96**	378	4.35	1.77	-1.23	392	2.31	2.11	0.23
	Post	386	4.12	2.07		386	3.54	2.32		386	4.19	1.89		396	2.35	2.18	
N.S.	Pre	376	3.61	2.34	0.48	376	3.72	2.18	2.36*	363	3.58	2.28	0.99	388	1.56	2.10	-0.06
	Post	377	3.69	2.40		378	4.10	2.24		366	3.75	2.34		393	1.55	2.13	
P.E.I.	Pre	330	3.92	2.31	2.67**	327	3.43	2.24	3.88***	317	3.88	2.06	1.17	328	1.80	2.13	0.43
	Post	386	4.35	2.03		387	4.06	2.11		369	4.07	2.01		392	1.87	2.09	
N.B.	Pre	310	3.88	2.15	0.65	309	3.61	2.11	3.02**	306	4.07	1.89	0.84	312	1.79	1.94	1.84
	Post	386	3.99	2.10		378	4.09	2.03		370	4.19	1.91		380	2.07	2.05	
QUE.	Pre	357	2.80	2.48	-0.60	365	4.04	2.23	2.08*	367	3.30	2.41	-1.26	389	1.85	2.30	-3.76***
	Post	395	2.69	2.43		380	4.36	1.92		379	3.08	2.31		407	1.28	1.94	
ONT.	Pre	393	3.26	2.25	-1.85	383	3.55	1.97	2.76**	378	3.13	1.99	-1.98*	394	1.88	1.96	-0.24
	Post	389	2.96	2.34		374	3.95	2.05		381	2.84	2.11		385	1.84	2.07	
MAN.	Pre	387	3.36	2.23	-2.49*	374	3.08	2.12	4.01***	374	3.47	2.00	-2.69**	394	1.66	1.87	-1.59
	Post	382	2.96	2.22		376	3.71	2.18		359	3.07	2.04		389	1.44	1.87	
SASK.	Pre	376	3.59	2.11	0.93	378	3.58	2.04	4.55***	373	3.86	1.94	-1.62	386	2.08	1.96	0.87
	Post	394	3.72	2.03		389	4.23	1.93		390	3.63	1.93		396	2.21	2.04	
ALTA.	Pre	387	3.56	2.24	-1.06	375	3.87	2.02	2.50*	380	3.62	2.02	-0.63	392	1.80	1.96	0.94
	Post	391	3.39	2.22		383	4.23	1.96		381	3.54	1.97		385	1.94	1.93	
B.C.	Pre	387	3.54	2.19	1.15	368	3.65	2.04	4.45***	383	3.50	2.12	2.16*	391	2.07	2.10	0.48
	Post	385	3.73	2.32		387	4.30	1.99		381	3.82	2.04		390	2.14	2.08	

* Indicates significance at .05
** Indicates significance at .01
*** Indicates significance at .001

TABLE D.1: (CONT'D)

		SEAT BELT USE (IN LAST 10)				SEAT BELT FAVOURABILITY			
		N	M	S.D.	t	N	M	S.D.	t
NFLD.	Pre	395	1.56	2.98	0.96	382	4.94	1.63	-3.68***
	Post	399	1.77	3.21		387	4.45	2.01	
N.S.	Pre	400	2.49	3.71	1.16	390	3.14	2.46	1.34
	Post	398	2.80	3.91		380	3.37	2.48	
P.E.I.	Pre	339	1.77	3.13	1.20	333	3.60	2.28	-0.58
	Post	399	2.06	3.35		383	3.50	2.30	
N.B.	Pre	324	2.81	3.70	0.08	313	4.03	2.03	0.30
	Post	399	2.83	3.78		378	4.08	2.05	
QUE.	Pre	393	3.13	4.16	-0.42	388	4.34	2.13	-2.00*
	Post	416	3.01	4.03		403	4.04	2.09	
ONT.	Pre	399	3.73	4.11	16.71***	393	3.80	2.11	0.70
	Post	394	8.17	3.32		392	3.91	2.26	
MAN.	Pre	399	2.19	3.42	0.73	392	3.76	2.05	-1.48
	Post	403	2.37	3.57		384	3.54	2.21	
SASK.	Pre	399	2.46	3.56	1.53	381	3.82	2.04	1.70
	Post	401	2.86	3.80		394	4.07	1.99	
ALTA.	Pre	398	3.00	4.03	1.82	391	4.06	2.00	-0.62
	Post	402	3.52	4.10		397	3.97	2.06	
B.C.	Pre	399	4.20	4.33	0.95	392	4.14	2.04	0.63
	Post	394	4.49	4.32		391	4.23	2.17	

*Indicates significance at .05

***Indicates significance at .001

TABLE D.2: Means and Standard Deviations of Secondary Attitude Questions by Wave by Province

APPENDIX E: Detailed Tables Describing the Long-Term Residual Effects from the Campaign

		EGG			PUMPKIN			COCONUT			MARBLE[a]			OVERALL		
		N	%	x^2	N	%	x^2	N	%	x^2	N	%	x^2	N	%	x^2
ST. JOHN'S	Pre	204	25.0		204	21.6		203	10.8		205	2.0		206	35.0	
	Post	197	66.5	112.1***	197	59.9	98.1***	193	53.9	100.0***	197	3.0	0.49	197	79.2	124.6***
	Third	197	73.6		200	67.5		194	52.1		199	2.5		200	82.0	
SAINT JOHN	Pre	183	9.3		184	2.2		184	6.0		185	2.7		186	12.9	
	Post	198	80.3	238.3***	197	79.7	289.5***	196	6.12	140.1***	198	3.0	4.52	200	88.5	303.6***
	Third	199	74.9		199	75 9		192	54.2		198	6.6		200	86.0	
MONTREAL	Pre	197	4.1		196	3.1		197	3.0		197	3.6		201	7.0	
	Post	217	72.4	219.0***	216	63.4	180.7***	214	55.6	132.0***	214	7.5	3.11	219	83.6	282.9***
	Third	194	61.9		191	57.1		193	38.3		194	6.7		200	72.0	
TORONTO	Pre	193	5.7		194	5.2		196	2.6		196	1.0		200	10.0	
	Post	199	75.9	231.3***	199	65.3	180.7***	198	62.6	168.1***	200	2.5	7.12*	200	88.0	314.0***
	Third	196	68.4		199	61.8		198	51.0		199	5.5		200	82.0	

(a) Indicates "Bogus" Recognition Question

* Indicates significance at .05

*** Indicates significance at .001

TABLE E.1: Percentages of Respondents Recognizing the Television Commercials by Wave by City

		SEVEN-TENTHS			RUN OVER			COLLIDE			TEACH[a]			OVERALL		
		N	%	x^2	N	%	x^2	N	%	x^2	N	%	x^2	N	%	x^2
ST. JOHN'S	Pre	194	38.7		202	26.7		202	20.8		204	24.5		206	51.5	
	Post	191	45.5	10.4**	196	46.9	29.1***	195	30.8	5.42	194	20.1	1.13	197	65.5	17.6***
	Third	193	54.9		199	51.8		195	24.1		196	23.0		200	71.0	
SAINT JOHN	Pre	173	32.9		182	14.8		178	10.1		181	15.5		186	37.6	
	Post	187	63.1	34.1***	183	60.7	86.5***	197	27.9	18.7***	197	21.8	4.47	200	74.0	59.2***
	Third	183	54.1		187	50.3		193	20.7		196	24.0		200	67.0	
TORONTO	Pre	191	23.0		197	10.7		197	11.2		193	16.1		200	32.0	
	Post	192	38.5	11.0**	193	28.0	24.7***	197	13.7	0.65	199	18.6	0.[illegible]	200	54.5	21.7***
	Third	199	33.2		192	29.7		196	13.3		195	16.9		200	48.0	

(a) Indicates "Bogus" Recognition Question

** Indicates significance at .01

***Indicates significance at .001

TABLE E.2: Percentages of Respondents Recognizing the Radio Commercials by Wave by City

		BRACING				TOSSED				THROWN CLEAR				SEAT BELT USE				SEAT BELT FAVOUR.			
		N	M	S.D.	F	N	M	S.D.	F	N	M	S.D.	F	N	M	S.D.	F	N	M	S.D.	F
ST. JOHN'S	Pre	200	3.43	2.06		189	2.75	2.17		195	3.26	2.22		204	1.71	3.15		196	4.81	1.75	
	Post	188	3.56	2.15	0.55	188	2.93	2.22	1.88	192	3.69	2.28	3.52*	196	2.18	3.50	2.18	189	4.29	2.11	3.53*
	Third	191	3.65	2.21		186	3.19	2.21		185	3.84	2.17		200	2.41	3.65		194	4.55	1.90	
SAINT JOHN	Pre	179	3.61	2.07		173	3.19	2.10		176	3.54	2.13		184	2.43	3.62		179	3.89	2.16	
	Post	196	4.15	2.09	4.55**	182	3.35	2.15	1.44	189	3.98	2.12	1.98	200	2.79	3.90	0.61	188	4.22	2.02	1.06
	Third	194	4.19	1.97		185	3.57	2.18		194	3.77	2.15		200	2.82	3.82		194	4.07	2.23	
MONTREAL	Pre	188	3.69	2.18		180	2.68	2.21		178	4.00	2.17		193	3.08	4.14		192	4.40	2.16	
	Post	193	3.46	2.01	0.64	180	2.60	2.13	1.32	190	4.02	2.00	0.21	217	3.27	4.13	77.3***	210	3.89	2.16	3.58*
	Third	191	3.49	2.23		183	2.95	2.15		180	3.89	1.96		197	7.56	3.92		197	3.88	2.29	
TORONTO	Pre	196	3.42	1.92		191	3.30	1.99		192	3.46	1.92		199	3.84	4.15		198	3.72	2.14	
	Post	194	3.55	2.04	0.22	185	3.47	2.14	0.32	191	4.07	1.96	5.04**	198	8.31	3.22	98.4***	198	4.12	2.07	4.41**
	Third	196	3.43	2.22		185	3.35	2.14		188	3.94	2.05		197	8.07	3.25		196	4.34	2.14	

* Indicates significance at .05

** Indicates significance at .01

*** Indicates significance at .001

TABLE E.3: Means and Standard Deviations of Key Attitude Questions and Ancillary Variables by Wave by City